

WIN!
Monthly Giveaways!
See Page 58

The Ramsey catalog...now in our 35th year!



ramsey ELECTRONICS



Precision Air Pressure & Elevation Sensor Meter!

Measure elevation to a third of an inch and air pressure in nine formats! The new UP24 provides you precision lab quality measurements at an affordable hobbyist price! USB interface to your computer too!

See page 12 for details!

**Fun
Hobby
Kits**

**AM/FM
Transmitters**

**Transmitters,
Receivers,
Amateur
Radio**

**Learning
Kits**

**Cool
Robotics**

**Test
Equipment**

**Tools,
Soldering,
and
Accessories**

**FM
Broadcast
Equipment**

**RF Shielded
Test
Enclosures**

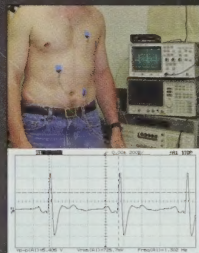
**Professional
Audio
Equipment**



ECG Electrocardiogram Heart Monitor!

Enjoy learning about the inner workings of your heart while also learning all about the electronic circuits and theory used to monitor it!

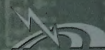
See page 34 for details!



For over three decades your one-stop electronics source for hobby kits, test equipment, broadcast equipment and some of the neatest electronic products available!

www.ramseykits.com

Or Call 800-446-2295



Welcome to the world of Ramsey Electronics...

More than just kits!

✓ Hobby Kits & Electronics

Do It Yourself Kits, Factory Assembled Kits, Mini-Kits, AM/FM Broadcasters, Transmitters & Receivers, Amateur Radio Gear, Educational & Learning, Robotics, Really Neat Stuff, Video Cameras & Accy's, Test & Measurement, Antennas, Tools, Soldering, and Accy's

✓ Professional FM Broadcast

FM Stereo Broadcast Transmitters, FM Stereo "Stations-In-A Box", Professional Audio Equipment, FM Broadcast Antennas & Accy's

✓ Professional RF Test Equipment

RF Signal Generators, Communications Service Monitors, RF Test Accy's

✓ RF Shielded Test Enclosures

RF Test Enclosures for Cellular and Wireless Communications, Wireless LAN Testing, Forensics Capture & Testing

✓ Professional Audio Equipment

Professional Quality Playback and Recording Equipment, Home Studio and Personal Creativity Tools

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☆ Friendly Dedicated People!

Our friendly staff is just like you, interested in neat electronic products! From the CSR's that take your order to the shipping personnel who confirm it, they are dedicated to one thing...your satisfaction!

☆ Easy Ordering!

We've redefined the term "easy" in regards to ordering! You can order safely and securely 24/7 on-line not only at www.ramseykits.com, but at our anchor stores on eBay and Amazon. You will also find a host of on-line resources to assist you with product questions, applications, and user forums to make your visit a pleasure! Beyond the internet you can also call our friendly CSR's toll free and they will answer any questions you may have and quickly guide you through your order. You will also find a convenient mail-in order form in this catalog. They've been there for thirty years and are still used today! All normal credit cards, PayPal, checks and wire transfers are accepted. Open accounts are also extended to suitably rated firms, organizations, and educational institutions. It really doesn't get much easier than that!



☆ Incredible Tech Support!

We consider our Technical Support Group to be second to none! That's a pretty strong statement, but we have 35 years of satisfied customers to back it up! We feel that buying and building an electronic kit is merely the beginning until that final moment when you turn it on and you see the incredible results of your handywork. Our Tech Support Group handles it all; from parts questions, assembly questions, theory questions, schematic questions, troubleshooting problems, to repair and return procedures. Whether it be a phone call to verify the hookup or an email about a parts value, they are there for you. Likewise for the 24/7 user and technical forums at www.ramseykits.com!

☆ Risk Free Return Policy!

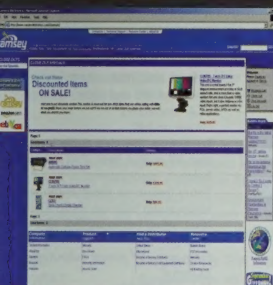
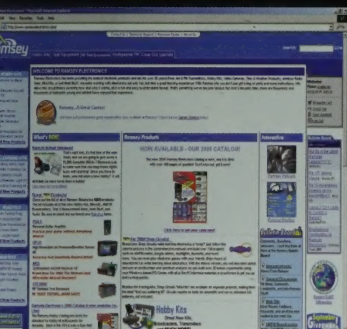
Not sure a kit or product is exactly what you are looking for? No problem! Order it and examine it (but don't build it if it's a kit!) for up to 10 days. If it's not exactly what you expected, return it for a full refund, no questions asked! Curious about the assembly of a product prior to building it? Got you covered there also; all manuals can be downloaded at ramseykits.com!

Shop online at www.ramseykits.com
Call Toll Free 800-446-2295

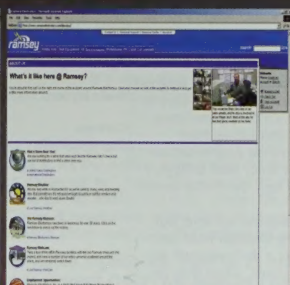
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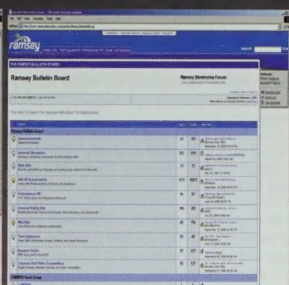
- ✓ Specials!
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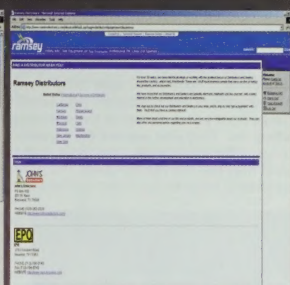
Clearance Specials
Save **BIG BUCKS!**



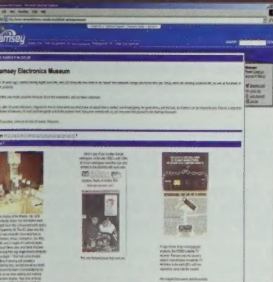
About Ramsey!
Learn **MORE** Than You Want!



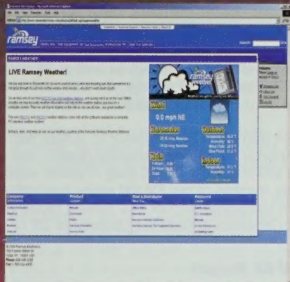
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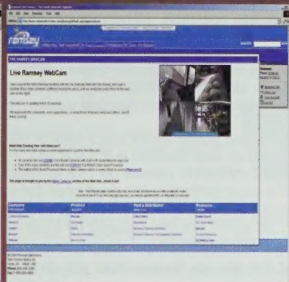
Dealer Information
Find a Dealer Near **YOU!**



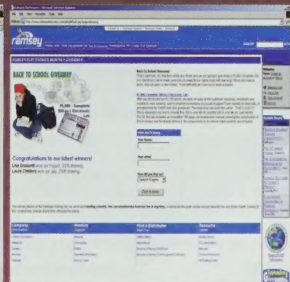
Ramsey Museum
The History of US! Yikes!



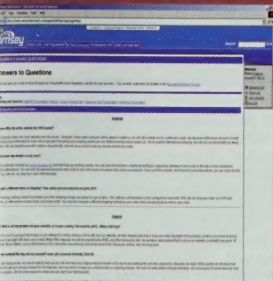
Ramsey Weather
Our Local Weather Display!



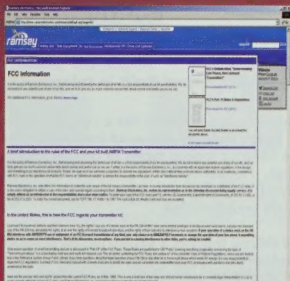
LIVE Webcams!
Watch Us **LIVE 24/7!**



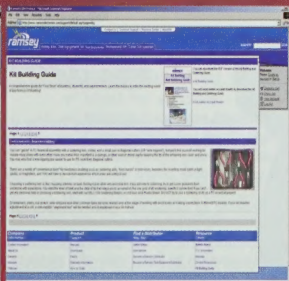
WIN Every Month!
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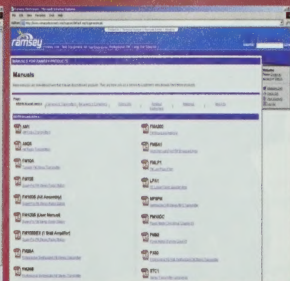
FAQ's
All The Answers You Need!!



FCC Reference Info
Operational Guidelines!



Kit Building Guides
How To Build A Kit!



Downloads!
Kit Manuals, Software...More!

www.ramseykits.com

Digital Synthesized FM Stereo Transmitters

- ✓ PLL synthesized for drift free operation
- ✓ Front panel digital control and display of all settings and parameters!
- ✓ Professional metal case for noise-free operation
- ✓ EMI filtering on audio and power inputs
- ✓ Super audio quality, rivals commercial broadcasts
- ✓ Available in domestic kit or factory assembled export versions

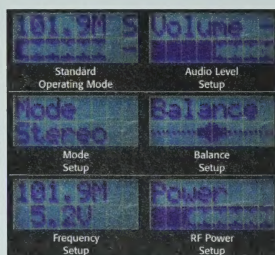
**All The Features You Asked For...
PLUS A WHOLE LOT MORE!**

THE LEGACY CONTINUES!

For nearly a decade we have been the leader in hobbyist FM radio transmitters. First we came out with our low cost FM10, the tunable FM transmitter that has set records as the most popular school, scouting, and first time hobbyist kit. Then we introduced the world famous FM25 series of FM transmitters. We took the basic concept of the tunable FM10, made it synthesized for rock solid and stable operation, and gave it the features and performance that made it THE LEADER in low cost FM stereo transmitters. From there we introduced our FM100 series Super Pro FM Stereo Radio Station.

NOW THE BEST OF BOTH WORLDS!

Introducing... our brand new FM30 series transmitters! How could we make history better? First, we listened to thousands of our customers who loved the stability of the PLL synthesized FM25 series but wanted easy to change front panel control of the operating frequency and wanted to know what frequency they were transmitting on. They also wanted the capability of controlling the audio levels at the transmitter rather than changing the input levels. We thought those were very legitimate requests, and our response was to re-engineer them use the FM100 series. "But I don't need an audio mixer, I don't need all that fancy stuff built-in, I just need a small transmitter I can afford!" Well here you go, designed from the ground up... the FM30 series!



Our RF engineers took it as a challenge and designed not one, but TWO transmitters! The FM30B is designed using through-hole technology and components and is available only as a do-it-yourself kit, with a 25mW output very similar to our FM25 series. Then they re-engineered their brand-new design using surface mount technology (SMT) for a very special factory assembled and tested FM35BWT version, with 1W output for our export market! Both are designed around an RF tight vinyl clad metal enclosure for noise free and interference free operation. All settings can be changed without taking the cover off! Enter the setup mode from the front panel and step through the menu to make all of your adjustments. A two line LCD display shows you all the settings! In addition to the LCD display, a front panel LED indicates PLL lock so you know you are transmitting. Besides frequency selection, front panel control and display gives you 256 steps of audio volume (left and right combined) as well as RF output power. A separate balance setting compensates for left/right differences in audio level. In addition to settings, the LCD display shows you "Quality of Signal" to help you set your levels for optimum sound quality. And of course, all settings are stored in non-volatile memory for future use!

The design includes EMI filters on line level audio and power inputs and a state of the art microstrip PCB inductor to reduce microphonics for the ultimate in alignment free operation. RF output is brought out to a professional, well shielded rear panel BNC connector for a perfect antenna match. Standard RCA connectors are used for left and right line level audio inputs. Both the FM30B and FM35BWT operate on 13.8 to 16VDC and include a 15VDC plug in power supply. The stylish black metal case measures 5.55"W x 6.45"D x 1.5"H. If you're looking for a super performer but don't need the extra features of our FM100 series transmitters, the new FM30B is for you! (Note: The FM30B is a do-it-yourself learning kit that you assemble. The end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body. FM35BWT is for export use and can only be shipped to locations outside the continental US or valid APO/FPO addresses or valid customs brokers for documented end delivery outside the continental US).

FM30B Digital Synthesized FM Stereo Transmitter Kit, 0-25mW RF Output **\$199.95**
FM35BWT Digital Synthesized FM Stereo Transmitter, 0-1W RF Output, Assembled & Tested, Export Only **\$299.95**

**SPECIFICATIONS**

Frequency Range:	87.9-108.1 MHz
Power Output:	0-25mW, BNC (FM30B) 0-1.0W, BNC (FM35BWT)
Audio Inputs:	Line level left and right RCA connectors
Controls:	Power on/off
Digital Controls:	Frequency, 256 step audio level, 256 step RF output level, 256 step audio balance, mono/stereo
Setup Digital Display:	Setup frequency, setup audio levels, setup audio balance, setup RF output level, setup mono/stereo, save settings
Normal Digital Display:	Frequency, RF power output, quality of signal
VCO Lock Display:	Front panel LED
Power Requirement:	13.8 to 16VDC, 500mA max
Dimensions:	5.55"W x 6.45"D x 1.5" H

**KIT**

**Includes Pre Installed
SMT Components!**

Synthesized FM Stereo Transmitter

- ✓ Synthesized 88 to 108 MHz for no frequency drift!
- ✓ Simple DIP switch frequency setting!
- ✓ Built-in telescoping whip or external antenna operation

Priced like an inexpensive hobby transmitter but performs like a commercial unit! Truly a cut above the rest, and that probably explains why it is the most popular hobby transmitter around the world! The FM25B features a PIC microprocessor for easy frequency programming without the need for lookup tables or complicated formulas! The transmit frequency is easily set using simple board mounted DIP switches. Frequency drift is a thing of the past with PLL control making your synthesized signal rock solid all the time! This is critical for radios with digital tuners. No drift, no noise, right on frequency without any tuning or tweaking! SMT components are preassembled!

Besides the rock stable transmitter, the FM25B features a superb stereo generator providing you with amazingly good stereo separation to keep even the pickiest audiophile happy! Stereo line level audio input with loop out is perfect for connection to your computer using similar stereo 3.5mm mini audio jacks. We also provide an 3.5mm to RCA stereo patch cable for the rear panel. Just plug it in and you're on the air. Kit comes with the matching case set, whip antenna, 110VAC power adapter, and audio patch cable. Case size 5"W x 1 1/2"H x 5 1/4"D. (Note: The FM25B is a do-it-yourself learning kit that you assemble. Please remember that the end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body in regards to the application and use of the FM25B).

FM25B Professional Synthesized FM Stereo Transmitter Kit, adjustable 5 uW to 25 mW Output

\$139.95



KIT

Wired & Tested

Super-Pro Synthesized FM Stereo Radio

**The Complete
Radio Station...
The Pro's Have
Chosen For Years!**

- ✓ Built-in mixer - 2 line inputs and one microphone input, line level monitor output!
- ✓ Precision active low-pass "brick wall" audio filter!
- ✓ Clean, filtered RF output suitable for RF amplification!
- ✓ Frequency range 88.0 to 108.0 MHz, 100 KHz steps
- ✓ Dual LED bargraph audio level meters!
- ✓ Automatic microphone ducking!

The true professional workhorse of our FM Stereo transmitter line, the FM100B has become the transmitter of choice for both amateurs and professionals around the world. From the serious hobbyist to churches, drive-in theaters, colleges and schools, it continues to be the leader. Not just a transmitter, the FM100B is a fully functional radio station and provides everything but the audio input and antenna system.

This professional synthesized transmitter is adjustable directly from the front panel with a large LED digital readout of the operating frequency. Just enter the setup mode and set your frequency. Once selected and locked you are assured of a rock stable carrier with zero drift. The power output is continuously adjustable throughout the power range of the model selected.

Audio quality is equally impressive. A precision active low-pass brick wall audio filter and peak level limiters give your signal maximum "punch" while preventing overmodulation. Two sets of stereo line level inputs are provided with front panel level control for both. Dual front panel LED bargraph meters provide left and right channel audio level metering. In addition to the line level inputs, there is a separate microphone input with a built-in mic mixer to control the level. Not enough? How about unattended microphone ducking! When enabled, the presence of mic audio automatically reduces and overrides the line level input! Just like the professional units at a fraction of the cost.

The FM100B series includes an attractive metal case, whip antenna and built in 110/220VAC power supply. A BNC connector is also provided for an external antenna. Check out our Tru-Match FM antenna kit on page 9, it's the perfect mate to the FM100B transmitter. We also offer a high power, export only kit and assembled version of the FM100B that provides a variable RF output power up to 1 watt. The 1 watt unit must utilize an external antenna properly matched to the operating frequency to maintain a proper VSWR to protect the transmitter and are for export use only. (Note: The FM100B and FM100BEX is a do-it-yourself learning kit that you assemble. The end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body. FM100BWT is for export use and can only be shipped to locations outside the continental US or valid APO/FPO addresses or valid customs brokers for documented end delivery outside the continental US).

FM100B Super-Pro FM Stereo Radio Station Kit, 5uW to 25 mW Output \$269.95
FM100BEX Super-Pro High Power (Export ONLY) Kit, 5uW to 1Watt Output \$349.95
FM100BWT Factory Assembled & Tested FM100BEX, 5uW to 1 Watt Output, Export Only \$429.95

Tunable FM Stereo Transmitter

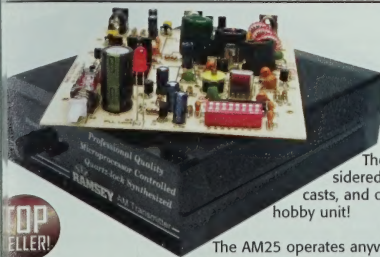
KIT

- ✓ Tunable anywhere in standard FM band... 88 to 108 MHz!
- ✓ Operates on 5 to 15 VDC
- ✓ Settable pre-emphasis 50 or 75 μ sec for use anywhere in the world!
- ✓ Easy to build, low cost transmitter includes matching case set!

There is a great entry-level kit that will teach the basics of FM Broadcast transmission while finding many uses around the home or dorm room. The FM10C has plenty of power to cover your home, backyard, or city block. Our manual goes into great detail outlining all the aspects of antennas, transmitting range and FCC rules and regulations.

You'll be amazed at the exceptional audio quality of the FM10C. Tunes through the entire 88-108MHz band in three separate ranges with a tuned LC circuit. Re-broadcast your favorite music commercial-free and with the dynamic range the musician intended, without all that nasty compression the big boys use to make their station sound louder than the competition. Runs on a standard 9V battery, external power from 5 to 15 VDC, or an optional 120 VAC adapter. Includes the matching case & knob set for a professional finished look. Case size 5"W x 1 1/2"H x 5 1/4"D. (Note: The FM10C is a do-it-yourself learning kit that you assemble. Please remember that the end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body in regards to the application and use of the FM10C).

FM10C FM Stereo Transmitter Kit With Case \$44.95
C125 110VAC Power Adapter \$9.95



KIT

**Be As
Stable
As A Rock!**

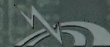
Professional Synthesized AM Transmitter

- ✓ Fully synthesized, no frequency drift!
- ✓ Ideal for schools
- ✓ Microprocessor controlled!
- ✓ Strappable for higher power output where regulations permit
- ✓ Includes AC power adapter and case set

The AM25 is not your ordinary hobbyist AM transmitter! The AM broadcast band is quite alive and well, and is still considered the home of talk radio. For years the AM band has been a popular place for community broadcasts, in-home broadcasts, and other local information broadcasts. Now you can have a professional synthesized AM transmitter at the cost of a hobby unit!

The AM25 operates anywhere within the standard AM broadcast band, and is easily set to any clear channel in your area. The design is similar to that of a commercial radio transmitter, so while you build it you'll learn how the "big guys" operate. It is widely used by schools - standard output is 100mW with range up to 1/4 mile, but is jumper settable for higher output where regulations allow. There is no tuning or tweaking involved with the AM25. The LC synthesized frequency is easily set with dip-switches and is rock solid without any drift, just like our FM25B. This is critical for any digital radio or tuner. The transmitter accepts line level input from any audio source including CD players, tape decks, computers, etc. Includes matching case & knob set and 110VAC power supply. Case measures 5"W x 1 1/2"H x 5 1/4"D. (Note: The AM25B is a do-it-yourself learning kit that you assemble. Please remember that the end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body in regards to the application and use of the AM25).

AM25 Professional AM Synthesized AM Transmitter Kit, Case, and AC Power Supply \$99.95



FM Broadcast Antennas

The Secret To Maximum Performance, And Great Range!

WHAT'S MORE IMPORTANT THAN YOUR ANTENNA? Antenna height and antenna match are the two easiest things you can do to increase your reception range. The old adage, "If you want more signal, put your money in an antenna rather than power" is certainly true. We feature quite a selection of top quality antennas to fill the bill for any enthusiast's needs - from the hobbyist to the commercial broadcaster serving thousands.

"The 3 most important factors in your broadcast system: Antenna, Antenna, and Antenna!"

The most efficient...and least expensive way to increase your range and signal quality!

For complete information, visit us at www.ramseykits.com



Rugged PVC Construction... Keeps The Weather Out!

KIT

We've been besieged with calls asking us where to get a good quality FM Broadcast antenna. Remember, matching your antenna to your transmitter is the single most important link in your transmitter setup - and a good antenna and match are the secret to getting maximum range.

When we say "match" we mean electrical impedance match... if the proper impedances are not maintained between transmitter and antenna, power is reflected away from the antenna and back into the transmitter! This can cause the final amplifier stage to be damaged, not to mention spurious signals and lousy range. Buy this kit and get the most from your FM Broadcaster!

TM100

FM Broadcast Low Power Antenna Kit (25 W Max)

\$69.95

5/8 Wave Colinear Vertical FM Antenna

- ✓ 5/8 wave for excellent gain and maximum range
- ✓ Field adjustable for a perfect match
- ✓ 3.4 dB gain effectively doubles your power!

TOP SELLER!

KIT

Precision Tune To Your Exact Frequency For A Perfect VSWR!

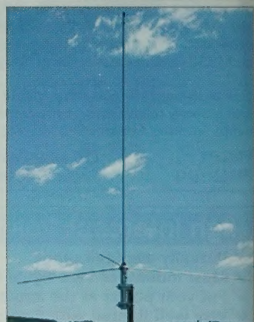
This is probably the most popular antenna we sell. Why? Let's start with the proven omnidirectional ground plane design, clean rugged construction, and how about easy mounting? The 5/8 wave design keeps your signal low to the horizon and not uselessly radiating up into space - great if your listeners are on the space shuttle, but the pits for the folks out at the edge of town! Imagine a donut shaped pattern of signal radiating from your antenna. For the most range out to the horizon, we need to "squish" that pattern flatter to squeeze more signal out - and that's what this antenna does.

Super easy to assemble and mounts to any common antenna mast. Has the common SO-239 style connector available anywhere and looks that just can't be beat. Try one and see if you don't agree that it's one heck of an antenna for the money! Height: 7' 7" 200 watt power rating. Order pre-assembled LMR400 coaxial cable assemblies below to match your requirement. Each cable set is factory connectorized and tested to match your transmitter and antenna.

FMA200

5/8 Wave Colinear Antenna, 200W Max

\$129.95



Professional Quality Log Periodic Design!

KIT

Log Periodic Directional FM Antenna

We developed this antenna for those applications where you don't need to provide omnidirectional coverage. Where, you might ask? When you are on the edge of town and you want to concentrate your signal into the most populated area, why waste signal on the outskirts? Your signal is directed into the forward path with a multiplying effect of over 4 times while the signal coming off the back is reduced by over 30 times!

The log-periodic design is wideband over the entire FM band meaning that you don't have to retune the antenna when you change frequencies. Also, the antenna is designed to be a DC ground which means a lot when you're in a thunderstorm prone area! Longest element 71" boom 45". Includes mounting brackets for horizontal or vertical use. SO-239 connector accepts a PL259 cable connector. 300 watt power rating. Easy to assemble in the field.

FMA300

Log Periodic Directional Antenna, 300W Max

\$379.95

- ✓ Horizontal or vertical polarization
- ✓ quadruples your transmit power!
- ✓ Directional pattern, puts the signal where you need it and not where you don't!
- ✓ All elements are DC ground for excellent lightning protection
- ✓ Greater than 7 dB gain and 15 dB front to back ratio!
- ✓ Broadband, no tuning, and easy to assemble on site!

LMR400 Low Loss Coax Assemblies

Wired & Tested

- ✓ Super efficient LMR400 flexible transmission line!
- ✓ Lower loss than standard coax!
- ✓ Factory assembled and tested and swept!

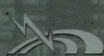
Low Loss, And Factory Assembled With The Correct Connectors!



The transmission line always seems to be the "last thing on the list" when putting together your broadcast station, however it is probably the most important component of the system! The transmission line together with an efficient antenna can be the difference of night and day for a station! Standard RG-8 coax will work for short runs, but provide considerable loss as the length increases. This loss results in your transmitter power literally being burned up and lost in the cable before it reaches the antenna! Lower power at the antenna means lower range of your station. It's as simple as that! LMR400 cable is your best bet for the lowest loss alternative to rigid Heliax feed line. Each length is factory cut, connectorized with a Type-N connector to match your transmitter and a PL-259 to match our FMA200 or FMA300 antennas above. Each finished cable length is frequency swept across the entire FM band prior to shipment.

FMC50 50' Low Loss LMR400 Coax, PL259/Type-N Connectors Preassembled
FMC100 100' Low Loss LMR400 Coax, PL259/Type-N Connectors Preassembled

\$125.00
\$200.00



Ramsey...Your One Stop Pro Broadcast & Audio Source!

Ramsey FM Broadcast

- ✓ **High Power Stations-In-A-Box**
- ✓ **High Power FM Transmitters**
- ✓ **Antenna Systems**
- ✓ **Studio Accessories**
- ✓ **Audio Support Equipment**
- ✓ **Custom OEM Configurations**

FM broadcast transmitters, antennas, and all the accessories you will ever need to get your station on the air and keep it on the air!

www.ramseyfm.com

See Page-82 or Visit Us Today!

Ramsey TV Broadcast

- ✓ **TV Stations-In-A-Box**
- ✓ **TV Transmitters**
- ✓ **DVB-T Systems**
- ✓ **DVB-S Systems**
- ✓ **MPEG Distribution**
- ✓ **Studio Equipment & Accy's**

TV broadcast transmitters, antennas, and the latest in VHF/UHF, DVB equipment and TV accessories!

www.ramseytv.com

Visit Us Today!

Ramsey Pro Audio

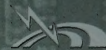
- ✓ **Production & DJ Mixers**
- ✓ **CD-R/RW Pro Recorders**
- ✓ **CD/MP3 Pro Players**
- ✓ **CD Master Recorders**
- ✓ **DVD Master Recorders**
- ✓ **Cassette Recorders & Players**
- ✓ **MiniDisc Recorders & Players**
- ✓ **Portable Hi-Def Recorders**
- ✓ **Digital Multi-Track Editors**
- ✓ **Computer & USB Interfaces**
- ✓ **Studio Equipment**
- ✓ **And A Whole Lot More!**

Professional audio equipment for AM/FM broadcast, audio distribution, editing, and entertainment!

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Holiday Favorites!

Electronics Is Fun, Especially At The Holidays

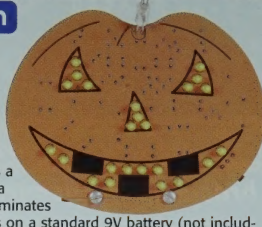
LED Halloween Pumpkin

- ✓ 25 bright LEDs!
- ✓ Random flash like a candle!
- ✓ Super bright illumination!

Spook Them With LEDs!

You won't be scraping the seeds and guts out of this pumpkin! Six transistor circuit provides a neat random flash pattern that looks just like a flickering candle. Then a super bright LED illuminates the entire pumpkin with a spooky glow! Runs on a standard 9V battery (not included). Includes an edge mounted on/off slide switch. From Velleman.

MK145 LED Halloween Pumpkin Kit **KIT** \$9.95



Portable EL Electroluminescence

- ✓ 3.3 feet long!
- ✓ Low power consumption!
- ✓ Highly visible brilliant colors

Wired & Tested

Steady Or Flash!



Electroluminescent illuminated flexible wire sets can be used for a lot of things but when they're battery powered they're perfect for Halloween and Trick or Treat safety concerns! Each thin, flexible EL wire set is 3.3' long and runs on two standard AA batteries (not included). Mode settings include steady glow and slow or fast flash! Make it part of a brilliantly lit, custom designed costume or simply add it for illuminated safety while Trick or Treating in the dark. From Velleman. (*Think Tron!*)

NWRR15 EL Illumination Wire Set, Red \$19.95
NWRG15 EL Illumination Wire Set, Green \$19.95
NWRB15 EL Illumination Wire Set, Blue \$19.95



LED Santa Display

- ✓ 126 LED animated display!
- ✓ Multi color!

Here Comes Santa!

What a way to welcome the holiday season and learn about electronics at the same time! This animated Santa and reindeer display has 126 dazzling colored LEDs to make a really nice holiday sign. Runs on 9-12VDC so you can use a standard 9V battery or an external power supply so it can be left on continuously. Includes an on/off switch. Measures 3.2" x 5.7". From Velleman.

MK116 Animated Santa Display Kit **KIT** \$19.95
AC125 110VAC Power Supply \$9.95



3D LED Christmas Tree

- ✓ Free standing 3D design!
- ✓ 16 flashing LEDs!
- ✓ Customize with extra LEDs!
- ✓ Can be hung on the tree!

Dazzle Your Friends!

This Christmas Tree is not your average PC board display! It has 4 "branch" sections giving it a 3D depth look! Its unique design holds a standard 9V battery at its base as its "trunk" and will stand up on a table or desk with or without the battery. 16 flashing red LEDs are placed on the branches. Extra green and yellow LEDs are included to allow you to customize your tree to your design! Runs on 9-12VDC or the 9V battery (not included) in its base. Measures 3.5" x 4.0". From Velleman.

MK130 3D LED Christmas Tree Kit **KIT** \$7.95
AC125 110VAC Power Supply \$9.95



Animated Ghost

- ✓ Automatically greets your visitors!
- ✓ Responds to sudden noises
- ✓ Built-in microphone
- ✓ Adjustable sensitivity

Moves, Shakes, Blinks!

Who says there aren't such things as ghosts? Once your friends see this one they'll think differently! The unique circuit board design includes two ominous blinking eyes that change with various conditions, including sudden changes in ambient noise. A highly sensitive built-in microphone picks up anything from noises to talking and makes the ghost dance with its built-in motor, make eerie sounds with the built-in speaker, and randomly blink. A white cloth and a hanger are included as shown to make it look even spookier! Runs on 2 AAA batteries. From Velleman.

MK166 Animated Ghost Kit **KIT** \$23.95



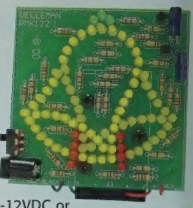
Animated Holiday Bell

- ✓ 83 LED animated motion!
- ✓ Multiple colors!

Swings Back And Forth!

83 LEDs provide a neat looking holiday bell that swings back and forth! Multiple green, red, and yellow LEDs provide you with a festive holiday spirit the moment you see this bell! A PC board mounted on/off switch and standard power connector are included. Runs on 9-12VDC or a standard 9V battery (not included). Measures 3.2" x 3.5". From Velleman.

MK122 LED Animated Bell Kit **KIT** \$13.95
AC125 110VAC Power Supply \$9.95



LED Deluxe Christmas Tree

- ✓ 134 random blinking LEDs!
- ✓ Large multi color display!
- ✓ Battery or external power!
- ✓ Built-in on/off switch

Light Up Your Tree In Style!

This beautiful electronic Christmas Tree consists of a whopping 134 bright LEDs! Of the 134 LEDs 18 randomly blinking "candles" give the tree an exciting animated look! Red, green, and yellow LEDs are used to provide a brilliant display. Runs on an external 9-12VDC supply or a standard 9V battery. Use an external power supply and leave it on continuously! Includes a PC board mounted on/off switch. PC board measures 5.6" x 3.2". From Velleman.

MK117 LED Deluxe Christmas Tree Kit **KIT** \$17.95
AC125 110VAC Power Supply \$9.95



LED Christmas Tree

- ✓ 16 bright flashing red LEDs!
- ✓ Easy 9V battery operation!
- ✓ Self standing or "hangable"

Display The Season!

While a little more basic compared to the others above, this LED Christmas Tree is still a very neat looking self standing attention getter! The green PC board has 16 bright red LEDs mounted in the traditional tree pattern. A nice 4 transistor circuit is used to make the LEDs blink just like your big tree does! An attached battery pack mounts on the bottom allowing the tree to be self standing or to be hung on your tree. Runs on a standard 9V battery (not included). Measures 2.4" x 4" x 1". From Velleman.

MK100 LED Christmas Tree Kit **KIT** \$6.95

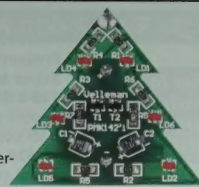


SMT LED Christmas Tree

- ✓ Alternating flashing 6 SMT LEDs!
- ✓ Great attention grabber!
- ✓ Learn SMT over the Holidays!

Wear A Flashing Tree!

Build this subminiature Christmas Tree and watch it alternately flash red surface mount LEDs! Small enough to wear as a badge or pendant, or to hang on the tree. Six high intensity SMT LEDs brilliantly light up this tree. People will be amazed seeing the actual components on the tree while it flashes. Plus you can tell them you built it! SMT components are used throughout the kit to give you a great start in surface mount. We know they are smaller than small, so as always we include extra parts in case you lose or damage any. Runs on one standard CR2025 or CR2032 Li-Ion button cell. Make sure to check out the magnifiers on page 73. Measures 1.75" x .13". From Velleman.



MK142 SMT LED Christmas Tree Kit **KIT** \$9.95

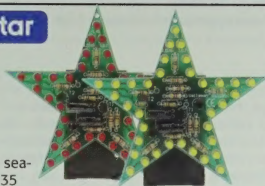
LED Flashing Holiday Star

- ✓ 35 brilliant red or yellow LEDs!
- ✓ Flashing or steady display!
- ✓ Freestanding or hanging!

Brilliant LED Star!

A great seasonal gadget or gift for the holiday season! A classic star shaped PC board contains 35 brilliant red or yellow LEDs. The circuit allows you to select either a flashing or steady display of the LEDs.

The built-in battery holder also acts as a freestanding base for table or desktop use. Can also be hung from the tree or ceiling. Runs on a standard 9V battery (not included). Measures 3.54" x 3.54". From Velleman.



MK169R Flashing Red LED Star Kit \$12.95
MK169Y Flashing Yellow LED Star Kit \$12.95

LED Sound Actuated Star

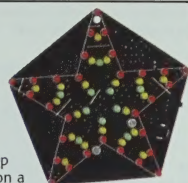
- ✓ Acts like a LED Vu Meter!
- ✓ Built-in microphone!
- ✓ Adjustable sensitivity!

Is It A Star Or A Meter?

This is one of the neatest holiday displays that will light up any party! 60 multi-colored LEDs form an attractive star on a dark background PC board. But it's not just a display...it responds to room audio!

What's right, the built-in microphone picks up music and room audio and the LEDs respond just like a professional LED Vu meter! Adjustable sensitivity allows you to balance the display to any audio level. Great for parties and events. Runs on 9-2VDC. Measures 4.2" x 4.4" x 1.4". From Velleman.

MK172 LED Sound Actuated Star Kit **KIT** \$19.95
IC125 110VAC Power Supply \$9.95



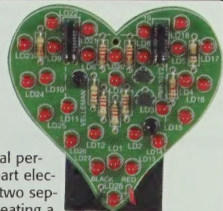
Flashing LED Sweetheart

- ✓ 28 brilliant red LEDs!
- ✓ Unique dual heart design!
- ✓ Freestanding mount!

The Perfect Valentine!

What a way to display your feelings to that very special person in your life! Dazzle her with this unique dual heart electronic display. 28 brilliant red LEDs are formed into two separate heart designs on the heart shaped PC board creating a real flashing display.

The built-in battery holder base makes the heart freestanding and perfect for a desk or table. Runs on a standard 9V battery (not included). Measures 2.4" x 2.4" x 1.2". From Velleman.



IK101 Flashing LED Sweetheart Kit **KIT** \$6.95

Flickering Electronic Candle

- ✓ Yellow high intensity LED!
- ✓ 3 different "flame modes"!
- ✓ Power saver timer!

Can't Blow This One Out!

What a great and safe way to display the traditional flickering candle at the holidays! In reality this "candle" is a high intensity Yellow LED, and that means it's safe for the kids, pets, and your fingers! Electronic circuit simulates three different modes: realistic flickering flame, steady flame, and slow fade in/fade out. All this without any heat, smoke, or mess! Plus the circuit features an automatic 5 hour power saver timer! The unique round PC board is designed to drop into a standard 38mm plastic or glass cup. Use a frosted cup for the best display results! Runs on a standard CR2032 button cell (not included). Measures 1.5" x .98". From Velleman.



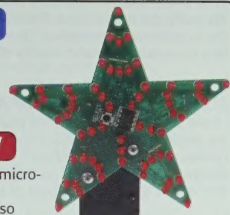
MK167 Flickering Electronic Candle Kit **KIT** \$8.95

LED Animated Effects Star

- ✓ 60 brilliant animated LEDs!
- ✓ Microprocessor controlled!
- ✓ 24 different effects with sequencing!
- ✓ Create your own multi-colored display!

Dazzling Animated Holiday Display!

This large star features a whopping 60 LEDs and a microprocessor to provide 24 separate animated effects! Besides the red LEDs, additional yellow LEDs are also included to allow you to custom build your own multi-colored display! Effects include 3 static displays, 15 blinking displays, and 6 animations complete with fading! In addition, "all effects" sequencing is available. Runs on your choice of a standard 9V battery or an external 9-12VDC source. Measures 4.13" x 4.33" x 1.38". From Velleman.



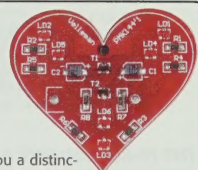
MK170 LED Animated Effects Star Kit **KIT** \$19.95
AC125 110VAC Power Supply \$9.95

SMT LED Flashing Heart

- ✓ Alternating flashing 6 SMT LEDs!
- ✓ Learn about SMT devices and design
- ✓ Gets her attention!

The SMT Valentine!

Just like the MK142 Christmas Tree, this little kit gives you a distinctive display using 6 Surface Mount (SMT) LEDs. The PC board is in the shape of a heart and is also red. The small size makes it perfect to be used as a badge or hanging pendant around your neck. Runs on a small CR2025 or CR2032 button cell (not included). Makes a great SMT learning kit, and extra SMT components are included just in case you lose or damage any! Measures 1.9" x 1.7" x .3". From Velleman.



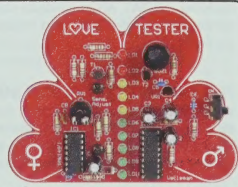
MK144 SMT LED Flashing Heart Kit **KIT** \$11.95

Electronic "Love Tester"

- ✓ 10 LED love scale display!
- ✓ Audible love level sound!
- ✓ Great party fun!

Check Your Love Life!

This uniquely shaped "Love Tester" is the ultimate gag for any couple! Designed to check your love life, each partner holds one end of the tester PCB at the appropriate male and female touch pads. Then they romantically join hands and watch the results on the love meter! 10 green, yellow, and red LEDs act like a scale, and just like the carnival when it hits the top they flash, indicating you're a red hot couple! There is also an audible alarm that changes with the "love level".



Next time you're at a party that just isn't going anywhere bring out this little tester and the party will come to life! It's a riot! Wide sensitivity range is compatible with all couples. Includes a built-in power on/off switch. Runs on a standard 9V battery. Measures 4.1" x 3.1" x .98". From Velleman.

MK149 Electronic Love Tester Kit **KIT** \$16.95



**Measure Elevation To A
Third Of An Inch
And Air Pressure In
Nine Formats!**

KIT

**TOP
SELLER!**

Wired & Tested

High Resolution Air Pressure-Elevation Sensor

- ✓ Pressure resolution greater than 0.0001kPa!
- ✓ Super elevation resolution better than 1/3"!
- ✓ 128 x 64 pixel graphical display!
- ✓ Shows realtime elevation & pressure changes!
- ✓ USB computer interface for easy data transfer!
- ✓ 13,824 samples of FLASH storage available!
- ✓ Small coat pocket size
- ✓ Special pilots menu
- ✓ Multiple built-in alarms
- ✓ Settable offsets for pressure and elevation
- ✓ Built-in NiMH rechargeable AA batteries
- ✓ Smart charger included
- ✓ Simple graphical menu based operation

What The Customer's Are Saying... "Stunning"

THE ULTIMATE PRODUCT FOR THE SERIOUS AND THE CURIOUS!

We really did it this time! The UP24 is one of our most advanced kits to date, and an absolute MUST for anyone serious about the environment around us! But the applications only begin there. The unique design allows unprecedented super high resolution measurements and display of absolute atmospheric air pressure.

ELEVATION TO A THIRD OF AN INCH!

I have written a lot of catalog pages and a boatload of specification sheets but this one is a challenge because the applications are endless and the performance characteristics are beyond description! The UP24 senses ambient air pressure and critically calculates elevation with unheard of precision! Using a highly sensitive sensor and 24-bit A/D converter in a special noise-immune design, less than 1/3" of an inch of elevation resolution is achieved! YES, we said 1/3 of an inch! This high accuracy and resolution opens the door to a host of sophisticated environmental air pressure monitoring applications.

AIR PRESSURE IN ANY FORMAT!

Unlike your normal run-of-the-mill barometer, air pressure is sensed in Pa's or kPa's. What are those you may ask? Pascals or KiloPascals. However, don't be afraid, for your convenience, and to fit any application you may have, it is also displayed in millibars, bars, PSI, atmospheres, millimeters of mercury, inches of mercury, and feet of water! Take your pick! The range of the UP24 is 15kPa to 155kPa. That also means:

- ✓ 15000 to 155000 Pascal's
- ✓ 150 to 1550 Millibars
- ✓ 0.15 to 1.55 Bars
- ✓ 2.175566 to 22.48085 Pounds per square inch
- ✓ 0.1480385 to 1.529731 Atmospheres
- ✓ 112.5093 to 1162.596 Millimeters of mercury
- ✓ 4.429498 to 45.77148 Inches of mercury
- ✓ 5.02 to 51.9 feet of water

THE HI-RES REALTIME ATMOSPHERE SENSOR!

Gradual pressure changes, like a barometer, can show you gradual changes in the weather. Instantaneous changes in air pressure can show you a whole lot more! Weather-wise, high resolution pressure changes can be used to anticipate and even estimate related wind gusts and speeds. This together with "on the fly" pressure changes will give you the upper hand in weather monitoring. Part of ARPS (Advanced Regional Prediction System) is to obtain and analyze realtime data to provide a prediction system for weather components. The UP24 is ideal as a highly accurate realtime data.

But what if the air pressure changes that need to be sensed and recorded are ever so slight? You have the perfect ultra reliable sensor and heart of an alarm for a building. When I first heard this I questioned it. Then the engineering staff said "watch this..." A hundred feet from the main entrance of Ramsey they called the front receptionist and asked her to open the front door to the building. WOW! An immediate change in air pressure registered on the UP24! From an open door, to a broken window, to wind damage, it's all detected and recorded in the UP24! The built-in alarm settings can be set for high or low limits to trip other equipment.

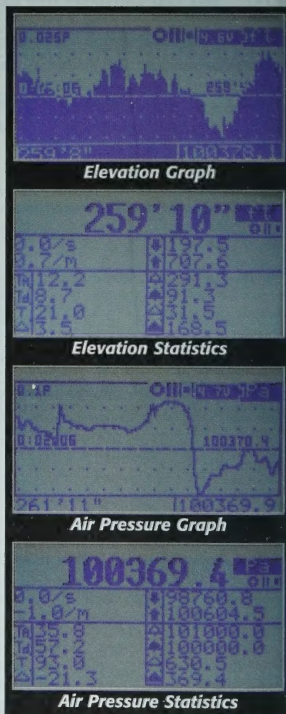
THE ULTIMATE ELEVATION METER!

We've talked about air pressure, now let's talk about elevation! The incredibly precise 24 bit A/D converter in the UP24 looks at the air pressure and converts it to elevation above sea level. Once again, there I was standing in the engineering office watching the LCD graph. The text at the bottom of the screen said 472' 3". I said yea, so what? They said raise it up a few inches and watch. As I raised it the display constantly changed...472' 8"; 473' 1" and so on. I couldn't believe it. The following day I took it to a tower site where I knew the ground elevation and it was dead-on... 1701' 6". Not only did I have the text display of the elevation but a chart graph of the elevation history!

The applications for the super accurate elevation meter are endless. From watching and recording elevations during hiking trips to measuring and recording the wave heights on boats! Let your imagination take over from there!

SPECIAL AIRCRAFT MODE!

What about aircraft? Needless to say, as a handheld device measuring air pressure, aircraft applications are limited to un-pressurized cabins. But the UP24 provides valuable flight assistance in such cabins and smaller aircraft. In fact, a special "Pilots Mode" is included in the menu to set a min/max altitude window setting to use in conjunction with the built in high and low alarms! The window is easily set up by programming in the desired high and low altitudes. If these limits are exceeded the UP24 will sound an alarm.



Unparalleled Accuracy And Resolution... Beyond Belief!

LOCAL OFFSETS & ALARMS...NO PROBLEM!

To accommodate site variances, offsets for pressure, elevation, and related hysteresis are also provided as a menu selected operation. Likewise, both high and low alarms can be enabled and set over a wide range of lows and highs for both pressure and elevation!

SMALL, LIGHTWEIGHT, THE SENSOR OF YOUR DREAMS!

While the UP24 is small enough to be kept in your coat pocket it boasts a large 2.78" x 1.53" 128x64 pixel LCD display screen making viewing easy. Display modes include both realtime pressure and elevation graphs as well as pressure and elevation statistics. There are 12 user selectable sample rates from 1/10th of a second all the way up to every 15 minutes.

What if you're in the field and want to save data captured in your UP24? No problem there either! The built-in FLASH storage provides 13,824 samples of storage. That's equivalent to 3 hours and 50 minutes at the 1 second sample rate! Of course it's about 20 minutes at 1/10th of a second sample rate but that's probably faster than anybody, other than Wile E. Coyote, would need! When you get back you can transfer your data to your PC through a standard USB interface. A simple set of commands sent via your USB port can be used to set up many of the parameters of the UP24 directly from your computer using a terminal type interface or your own program. The data is comma delimited so it can easily be loaded into a spreadsheet.

Does all of this sound too good to be true? It comes close! And it all fits in a small handheld case that measures 5.5" x 3.6" x 1.5" and weighs slightly over half a pound with batteries. It runs on three internal NiMH AA rechargeable batteries and includes an external charger that can be operated on the supplied 110VAC adaptor or from a 6 to 15VDC source, like your car battery. Operating time on a full charge is over 4 days of continuous operation. Want to run 24/7 even during power outages? Just connect the charger and turn on the UP24. It will charge the batteries and then trickle charge as long as necessary. If the power goes off the batteries will take over. Once the power is restored the batteries will be recharged for the next time. Because we use NiMH batteries they are not subject to the memory effect problem that older NiCAD batteries had so the battery life is very long. If you're looking for the finest air pressure and elevation sensor, check out the UP24, truly a marvel in the industry!

SIMPLE VISUAL BASIC APPLICATIONS!

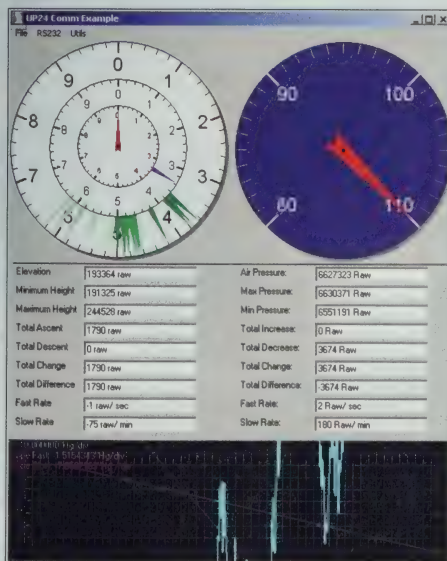
A Visual Basic application available on our web site enables you to have a dial type graphic display of pressure, altitude and statistics in real time on your computer and update the data on-line as text data into a custom spreadsheet. Want to design your own interface? We even supply the Visual Basic source code for the graphics display application. You are free to use it to customize your own application. Routinely updated interface software is available FREE at our website 24/7! Got an application you'd like to share? We'll be glad to make it available to our UP24 users!

SPECIFICATIONS	
Pressure Range:	15kPa to 155kPa
Pressure Units:	KiloPascals, pascals, millibars, bars, pounds per square inch, atmospheres, millimeters of mercury, inches of mercury, feet of water
Elevation Range:	-1,000 feet to 44,300 feet (-308.4 to 13,504 meters)
Elevation Units:	Feet/inches, meters, kilometers
Display Modes:	Pressure graph, pressure stats, elevation graph, elevation stats
Resolution:	Better than 1/3 of an inch (8.5 mm)
Sample Rates:	12 selectable rates: 1/10 sec, 1/5 sec, 1/2 sec, 1 sec, 10 sec, 15 sec, 30 sec, 1 min, 5 min, 10 min, 15 min
Offsets:	Selectable pressure, elevation, pressure hysteresis, elevation hysteresis
Offset, pressure:	14kPa to 114kPa in 1/10Pa increments
Offset, elevation:	-3,298.4' to 45,639.4' in 0.1' increments
Offset, pressure hysteresis:	0Pa to 10Pa in 0.1Pa increments
Offset, elevation hysteresis:	0' to 32.8' in 0.1' increments
Alarms menu:	Low and High Pressure, Low and High Elevation, low/high on/off
Alarm, high pressure:	100kPa to 114kPa in 0.1Pa increments
Alarm, low pressure:	14kPa to 100kPa in 0.1 increments
Alarm, high elevation:	158.6' to 45,639.4' in 0.1' increments
Alarm, low elevation:	-3,298.4' to 45,639.4' in 0.1' increments
Storage:	13,824 samples or 3 hours 50 minutes at 1 second sample rate
Pilot elevation window:	0.0' to 45,639' in 0.1' increments
User interface:	Single rotary/momentary push knob with graphical drop down menus, power push on/push off
Computer interface:	USB 2.0
Utility menu, calibrate:	-1,000Pa to 1,000Pa in 0.1Pa increments
Utility menu, resets:	Reset stats, reset chart data, reset to default settings
Display:	LCD, 128W x 64H pixels Viewing Area: 2.78"W x 1.53" H (70.7mm x 38.8mm) Dot Pitch: 0.02" W x 0.02" H (0.52mm x 0.52mm) Dot Size: 0.019" W x 0.019" H (0.48mm x 0.48mm)
Power Requirements:	Battery: 3x internal NiMH AA cells; Provided external charger that requires 110VAC or 6 to 15 VDC input
Color:	Black
Dimensions:	5.5"L x 3.6"W x 1.5"H (139.5mm x 91.4mm x 38.1mm)
Weight:	Less than 0.6 lbs, 0.27 kg including batteries

Command Description

G EL	Get elevation
G PR	Get pressure
G OP	Get offset pressure
G OE	Set offset elevation
G VB	Get supply voltage
G CH	Get entire chart (in CSV format)
G PS	Get pressure stats (in CSV format)
G ES	Get elevation stats (in CSV format)
G PU	Get Pressure Units and index
G EU	Get Elevation Units and index
G SR	Get Sample Rate and index
G SD	Get Screen dump
S PU #	Set pressure units index
S EU #	Set elevation units index
S RE	Set reset elevation stats
S RP	Set reset pressure stats
S SR #	Set sample rate index
S RM #	Set report mode (send data per sample mode, 0 off, 1 on)

UP24 GET and SET commands



UP24 Visual Basic software application screen display



Programmable Message Board

KIT

- ✓ Includes backlit LCD display!
- ✓ Serial interface!
- ✓ 8 inputs!
- ✓ Non-volatile EEPROM memory!
- ✓ No programming skills needed!

DISPLAY MODES

1. Display the status of all inputs simultaneously
2. Display all active inputs
3. Display active input with highest priority
4. Display text messages in a "tickertape" display

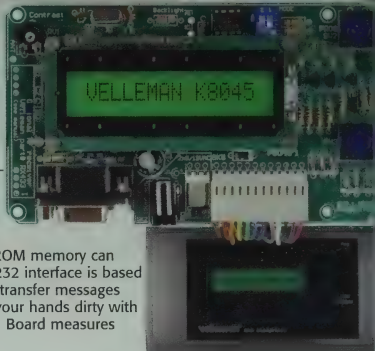
If you have never experimented or used an LCD message display, this kit is for you! You can use this as a stand-alone display that is remotely programmed or as an integral display for one of your own projects! With a very nice superwhite backlit 16 character LCD display you can provide alphanumeric displays in four display modes.

There are 8 separate inputs and each input accepts dry contacts, open collectors or logic levels. The non-volatile EEPROM memory can store up to 9 sixteen character messages! A default message can be displayed to signal that no inputs are active. RS232 interface is based on 2400/N/8/1 with no handshaking to make for a simple interface. Message transfer software is available online to transfer messages from your PC to the message board. Messages can be recalled by a simple pushbutton. This is the perfect kit to get your hands dirty with alphanumeric displays and their control circuits. It's fun, you learn, and you have a really great display when it's built! Board measures 4.9" x 2.9" x 1.2". If you're looking for a really nice finished display, order the custom case/bezel kit. From Velleman.

K8045
B8045

Programmable LCD Message Board Kit
Custom Enclosure With Matching Bezel

\$49.95
\$29.95

TOP
SELLER!

KIT

**Learn How USB Works...
Then Put It To Work!**

USB Experimenter's Interface Board

- ✓ 5 digital input channels!
- ✓ 8 digital output channels!
- ✓ 2 analog inputs and outputs!
- ✓ Diagnostic software & DLL included!

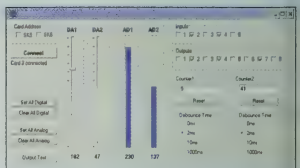
Not so long ago the universal answer for external control from a PC was the serial port. It was easy, it was simple, and you really couldn't mess anything up! Then came parallel port outputs for higher speed connections and transfers. What came next? The "Universal Serial Bus" or USB. Everything has gone to USB connections due to their speed, reliability, and plug and play simplicity. In fact, go to an office store and try to find a printer with a parallel port these days! They call those Legacy products... and legacy technology!

- 5 Digital Inputs:
2 Analog Inputs:
8 Digital Outputs:
2 Analog Outputs:
Gen Conv. Time:
Power Supply:
Software:
PC Requirements:

SPECIFICATIONS

0=ground; 1=open, on board test buttons
Attenuation and amplification, internal test
Open collector, 50V/100mA, LED indication
0-5V at 1K, PWM 0-100% open collector
20ms per command
Through USB, 70mA approx.
Diagnostic Windows software with DLL
Pentium class or higher, USB1.0 or higher,
Win98SE, WinME, Win2K, XP
Dimensions:
5.7" x 3" x .8"

Well it's time to get hands-on experience developing USB interfaces! This board provides everything needed. All communication routines are contained in a Dynamic Link Library (DLL) that is provided along with Windows based diagnostic software. You can also write custom Windows applications in Delphi Visual Basic, C++, or any other 32-bit Windows development tool that supports calls to a DLL. A variety of inputs and outputs are provided that are controlled and monitored with the diagnostic software. Learn USB the fun way, and watch it work! From Velleman. (No dreaded blue screen of death with this one!)



K8055

USB Experimenter's Interface Board Kit

\$44.95

Extended USB Experimenter's Interface Board

KIT

- ✓ 33 total inputs and outputs!
- ✓ Digital, analog, & PWM
- ✓ Isolated computer connection!
- ✓ Communications routines!
- ✓ 0-10V or 0-5V selection per input/output
- ✓ Includes diagnostic and testing software
- ✓ Advanced features

**Go To The Next Level Of
USB Experimenting!**

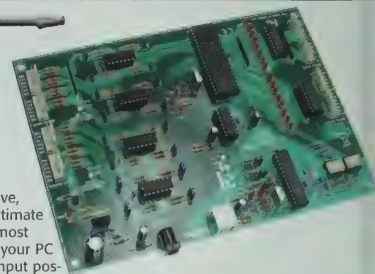
- 8 analog 10 bit inputs:
8 analog 8 bit outputs:
8 digital inputs:
8 digital outputs:
1 PWM output:
General response time:
USB port:
USB cable:
USB power:
External power:
Software:
PC Requirements:
Dimensions:

SPECIFICATIONS

0-5 or 0-5V at 20kOhm
0-5 or 0-10V at 47 ohm
Open collector, gnd=0, LED indication
Open collector, 50V/100mA, LED indication
0-100% open collector, 40V/100mA, LED
4ms per command
USB1.1 and USB2.0 compatible
Included A-B
60mA, up to 8 cards to one PC
12VDC at 300mA (not included)
Diagnostic Windows software with DLL
Pentium class or higher, USB1.1 or 2.0,
Win98SE, WinME, Win2K, XP, Maybe Vista!
2.7" x 5.6" x 0.8"

This interface board is the big brother of the K8055 above, and is packed with even more features, making it the ultimate PC interface tool for hobbyists. The ability to control almost any device imaginable and get real-time feedback from your PC means virtually unlimited possibilities! The high throughput possible with this board will be a big help to anyone working with bandwidth limitations of serial and parallel port interfaces, and since the USB is handled in hardware, communication between your computer and the device generates very little CPU overhead!

Like the K8055, all communication routines are contained in a Dynamic Link Library (DLL) that is provided along with Windows based diagnostic software. You can also write custom Windows applications in Delphi Visual Basic, C++, or any other 32-bit Windows development tool that supports calls to a DLL. This advanced interface has a total of 33 inputs and outputs that include both digital and analog inputs and outputs as well as one PWM output.



Connection between the interface board and your computer is galvanically-optically isolated so damage to the computer is impossible. This provides an even greater level of secure implementation.

Get ready to take your USB development to the next level. From Velleman. (Just had to make the Vista comment in the spec box... how do you spell compatibility?!)

K8061

Extended USB Experimenter's Interface Board Kit

\$124.95

PIC Programmer & Experimenter

KIT

- ✓ Supports 8, 14, 18, & 28 pin PICs
- ✓ Includes a PIC16F627 Microcontroller!
- ✓ On-board programming switches and LEDs!
- ✓ Software included!

**Don't Just Program Them..
Learn All About Them!**

Unlike the stand-alone programmer K8076 below, this programmer also acts as an advanced experimenters board for PIC microcontrollers. Separate 8, 14, 18, and 28 pin sockets accommodate a wide variety of controllers. This eliminates the need for patching a universal ZIF socket. In addition, programming switches and LED status and feedback indicators to help you with your programming. Once programmed, no need to move the PIC to another board, making the K8048 a great teaching tool for PIC programming. Also includes a standard PIC 16F627 PIC to experiment with, over and over again!

SPECIFICATIONS

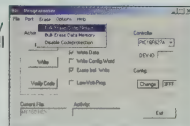
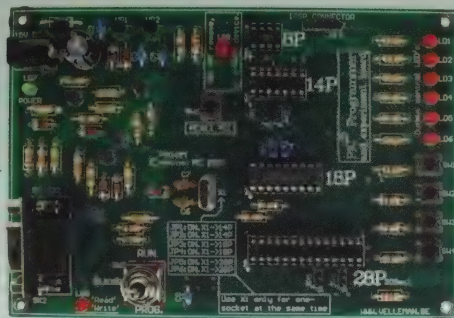
Supported Controllers: PIC12F629, PIC12F675, PIC16C83, PIC16CR83, PIC16F83, PIC16C84, PIC16CR84, PIC16F84, PIC16F84A, PIC16F870, PIC16F871, PIC16F872, PIC16F873, PIC16F873A, PIC16F874, PIC16F874A, PIC16F876, PIC16F876A, PIC16F877(A) (ICSP only), PIC16F627, PIC16F627A, PIC16F628, PIC16F628A, PIC16F648A, PIC6F30, PIC16F676, PIC16F818, PIC16F819, etc.

Serial Connection: DB9

Power supply: 12-15VDC, 300mA

Dimensions: 5.75" x 4" x .79"

Standard programming functions are similar to the K8076. Code can be created in any ASCII word processor (i.e. notepad) or using Microchip's MPLAB development package (available at www.microchip.com). After writing the code and compiling, your code can be written directly to the microcontroller! The ICSP function allows you to reprogram controllers still in-use/powered by another board by simply connecting the chip to the ICSP bus on the programmer! All the software you need to get started is included, and with a basic knowledge of ASM and this kit the possibilities are endless! Check out the screen shot of the included software. Compatible with Win95/98/ME/NT/2K/XP. If you are looking for a quick PIC microcontroller programmer only, without the advanced experimenter features, check out the K8076 below. From Velleman.



K8048 PIC Programmer & Experimenters Board Kit
AC125 110VAC Power Supply

\$39.95
\$9.95

TOP
SELLER!

KIT

**Program Your Own
Flash Microcontrollers!**

PIC Programmer Board

- ✓ Configurable 40 pin ZIF socket!
- ✓ Supports multiple PIC controllers!
- ✓ DB9 serial interface for PC's!
- ✓ Includes PICprog2006 software!

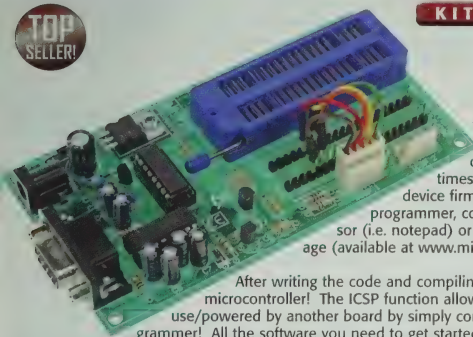
SPECIFICATIONS

Supported Controllers: PIC10F200, PIC12C508A, PIC12CE518, PIC12F629, PIC12F675, PIC16F54, PIC16F84A, PIC16F870, PIC16F871, PIC16F872, PIC16F873, PIC16F874, PIC16F876, PIC16F877, PIC16F627, PIC16F627A, PIC16F628, PIC16F628A, PIC16F648A, PIC16F630, PIC16F676, PIC18F2550, etc.

Serial Connection: DB9

Power supply: 12-15VDC, 300mA

Dimensions: 5.23" x 2.57" x .79"



This multifunctional programmer for PIC microcontrollers will let you take advantage of their flexibility, reprogramming up to 1000 times to perform different functions, upgrade device firmware, or just play around! When using this programmer, code can be created in any ASCII word processor (i.e. notepad) or using Microchip's MPLAB development package (available at www.microchip.com).

After writing the code and compiling, your code can be written directly to the microcontroller! The ICSP function allows you to reprogram controllers still in-use/powered by another board by simply connecting the chip to the ICSP bus on the programmer! All the software you need to get started is included, and with a basic knowledge of ASM and this kit the possibilities are endless! To get more

hands-on training and experience with PIC controllers, check out the K8048 programmer and experimenters board above, it gives you all the programming capabilities plus a extra on-board experimentation capabilities. From Velleman.

K8076 PIC Programmer Board Kit
AC125 110VAC Power Supply

\$39.95
\$9.95

Prototype Design Breadboards

- ✓ Color coded design for easy breadboarding!
- ✓ guaranteed for 5,000 insertions!
- ✓ Aluminum ground plates for high speed and low noise designs!
- ✓ Additional jumper wire kit available

**Prototype it without
Soldering it!**

TOP
SELLER!

WBU202

WBU206



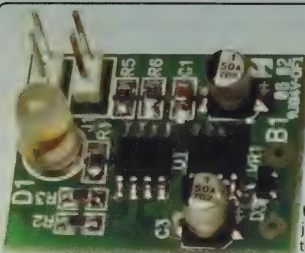
WJW70

If you're looking for prototype breadboards for your design and engineering projects, we've got you covered! These breadboards are the highest quality design that are guaranteed for 5,000 wire and component lead insertions! All blocks are premium non-warping design with non-conductive self adhesive backing. Aluminum ground plates are used to provide the best prototyping of high speed and high frequency designs while maintaining low noise.

Each breadboard has a easy to read color coded letter/number matrix to make tie point connection a breeze. Designed for components and wire jumpers with 20-29 AWG (0.3-0.8mm) wire leads. The WBU202 breadboard block consists of 1 terminal strip, 2 bus strips, 830 tie points, and provides a breadboarding area of 6.5" x 2.1". The larger brother WBU206 is mounted on an aluminum back plate with rubber bench top rubber feet. 4 coded binding posts are provided for power or signal connections of your choice. 3 terminal strips, 5 bus strips, 2,390 tie points are included and provide a breadboarding area of 6.9" x 5.8". Order jumper wire kit WJW70 that includes 140 various jumper wire pieces in 5 different sizes. Each jumper is color coded and insulated, with preformed ends.

WBU202 Prototype Breadboard, 1 Terminal Strip, 2 Bus Strips, 830 Tie Points
WBU206 Prototype Breadboard, 3 Terminal Strip, 5 Bus Strips, 2,390 Tie Points
WJW70 Jumper Wire Kit, 140 Pieces

\$7.95
\$23.95
\$4.95



KIT

Learn SMT With The Latest Technology LEDs!

Don't let the old "blinky" name scare you away from this marvelous little kit! It was originally designed as a way to show off the latest technology in RGB (Red, Green, Blue) full color LEDs while providing kit builders with a fun and economical SMT practice kit.

Uses PWM methods to generate any color with a simple 8-pin microcontroller, with switchable speed selection as well! The dual jumper control system tells the microprocessor what scanning speed is desired for a full cycle of 16,777,216 possible colors from the LED! It randomly selects different color scanning modes to wow any observer to the point of distraction. This little attention getter is fun to build and has loads of possible applications. The SBRGB is a perfect attention getter for sales displays, name badges, and beanie. Operates from 6VDC to 12VDC and will run continuously on a standard 9V battery for several days! And if you're new to SMT technology, don't worry, we include extra SMT components to cover your mistakes! You may wonder why you would pay 30 bucks for a blinky kit... but wait till you see the LED smoothly change colors in front of your eyes!

SBRGB1 SMT Multi Color Microprocessor Blinky Kit
\$29.95

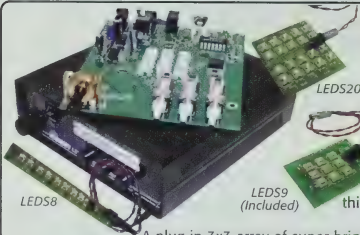
High Intensity SMT Blinky

KIT

- ✓ Super bright SMT LEDs
- ✓ Subminiature board, perfect for displays
- ✓ Operates from 6 VDC with included cells
- ✓ Learn SMT the FUN WAY!

Super Bright... Super Small!


What can be said about a Surface Mount blinky kit? The BL2 is the revival of our classic BL1 blinky kit in a new, modern form! Yes, two LEDs that blink, just like our original blinky kit that has made us famous, but this one is subminiature and designed with SMT components! Why, you ask? Besides the obvious, a really neat, super bright attention grabbing display, there's no better way to learn how to work with SMT components! Don't worry; we even include spare SMT chips for when you goof up! When complete, the BL2 provides alternating super bright red and blue LEDs. Runs on 6VDC, and we include two LR55 button cells and a cell holder to mount on the backside of the board. It's one complete unit! If you don't want SMT LEDs you can also use regular T1 1/4 LEDs (included). If you want to learn what SMT is all about, the BL2 is for you! While you're at it, you might want to check out the magnifiers in our tools section on page 73. You'll need them! (You'll definitely want to keep your reading glasses handy when you build this one!)

BL2 High Intensity SMT Blinky Kit
\$17.95


TOP SELLER!

KIT

Dance To the Beat!

Everyone has seen Xenon strobes "stop" a spinning quarter or flash to music. Now you can get the same effect without the expense and hassle of high voltage Xenon tubes! That's right, a strobe without a Xenon flash tube to break! The price of super bright LEDs keeps falling as their light output keeps increasing, making them affordable for everything from traffic signals to vehicle tail lights... and now flashing strobe lights!

High Power LED Strobe Light

- ✓ Everlasting LEDs won't burn out!
- ✓ Variable flash rate or audio trigger!
- ✓ Bass or treble trigger modes!
- ✓ Use as a stroboscope for stop action effects!
- ✓ Safe low voltage construction-no high voltage or fragile Xenon tube to break!

A plug-in 3x3 array of super bright Telux™ LEDs creates a brilliant sharp flash similar to a Xenon flash tube. The LEDs can also be mounted directly on the main PC Board if desired. In the standard flash mode, a variable rate control varies the flash frequency from approx 1 to 220 flashes per second. In the audio sync mode the flash is triggered by any audio input you provide into the standard RCA audio input connector. Built-in low and high pass filters allow you to select either bass or treble music triggering! An external trigger in/out connector lets you connect multiple units together for simultaneous flash. Optional plug-in display boards with 8 or 20 LEDs are available for even more strobing power! Just imagine surrounding your room with a few of these, triggered to your stereo! Runs on 12-15 VDC, and unlike the high voltage Xenon strobes of the past, the LEDS1 is safe for the kids to build! The plug-in display boards may be mounted on top of the case, or remotely located. Be one of the first to experience the new high output LEDs! (No, an 8-track of disco music and a leisure suit isn't included with this kit!)

LEDS1C High Power LED Strobe Light Kit With Case
LEDS8 Display Board, Inline Array Of 8 LEDs
LEDS20 Display Board, 5x4 Array Of 20 LEDs
AC125 110VAC Power Supply

\$44.95
\$17.95
\$29.95
\$9.95

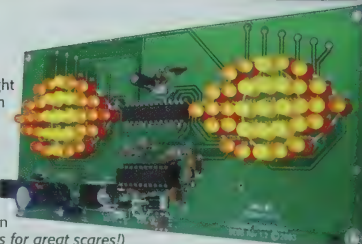
Blinky-Eyes Animated LED Display

KIT

- ✓ Blinking Eye display of 66 super bright LEDs!
- ✓ Microprocessor controlled
- ✓ Changes brightness with ambient light levels
- ✓ Animated with constant motion!

A Real Eye Catcher!

The ultimate animated LED kit that will dazzle you and delight your friends! Uses a microcontroller to randomly select from many different animations such as a long pause before a wink, or a twinkle of the eye to startle passers-by. Great for Halloween applications. Four animation modes: 1. Off for long random periods, then blinks or winks. Designed to scare! 2. On for long periods before performing an animation, perfect for costumes and displays! 3. Animates all the time for constant motion, perfect display attention-getter. 4. Random fire! When placed in a pumpkin will light the pumpkin like there is a fire within! Truly awesome! As if this weren't enough, the BE66 can also control a small hobby motor to shake bushes at random intervals or signal an external player to make a scary sound! Also has a CDS cell to control various modes of automatic light control. Runs on 12VDC or optional AC power supply. (No boring twinkle kit here! You have to see it to believe it! Hide it in the bushes for great scares!)



BE66 Blinky-Eyes Animated Display Kit
AC125 110VAC Power Supply

\$59.95
\$9.95

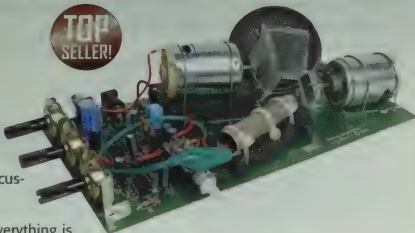
Laser Light Show

- ✓ Audio input modulates pattern!
- ✓ Adjustable pattern and speed
- ✓ Projects neat motorized patterns
- ✓ Uses safe plastic mirrors

KIT

**True Laser Beam Patterns...
With Audio Modulation!**

**TOP
SELLER!**

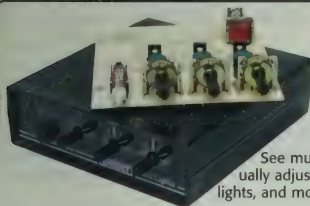


You've probably seen a laser show at concerts or on TV. They're pretty impressive to say the least! Knowing that you can't afford a professional laser display we challenged our engineers to design one that's neat and easy to build, yet inexpensive. Well, the result is the LL51 Laser Light Show! This thing is sweet! It utilizes two small motors and a small standard laser pointer as the basics. Then we gave it variable pattern and speed controls to customize the pattern!

Not enough, you say? How about a line level audio input to modulate the pattern with your music? You bet! Everything is included, even the small laser pointer. And to make the kit absolutely safe we used plastic mirrors instead of glass that could break! Runs on 6-12 VDC or our standard 12VDC AC Adapter (not included). If you're looking for a fun and neat little laser kit, the LL51 is for you!

LL51
AC125 Laser Light Show Kit
110VAC Power Supply

\$44.95
\$9.95



**TOP
SELLER!**

KIT

A Dazzling Display Of Light!

See music come alive! Three different lights flicker in time to music, one light each for low, mid, and high frequencies. Each is individually adjustable, runs on 120 VAC and controls up to 300 watts per channel - enough to drive spotlights, Christmas lights, mood lights, strip lights, and more! Speaking of mood light, this will really crank up your next party!

So create your own light show just like the rock concerts and Vegas shows in your own home. Single speaker level audio input connector on back (RCA connector) connects to any speaker output of your source. Simply parallel the connection to one of your speakers for a simple and clean installation. No need to tie up a line level or head-phone output! Includes the matching case & knob set shown to give your music lights kit a great finished look. Runs on 110VAC/60Hz to power your choice of 110VAC lights up 300 watts per channel.

MLT1C Music Lights Kit With Case

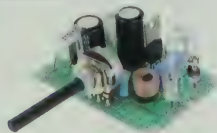
\$34.95

Dazzling Electronic Music Lights

- ✓ Control 3 channels of lights at 300 watts per channel!
- ✓ Lights flicker to different music frequencies: Low, Mid, High
- ✓ Runs on 120 VAC

Xenon Tube Strobe Light

- ✓ Ultra bright Xenon flash tube!
- ✓ Adjustable flash rate!
- ✓ Runs on 110-120VAC



Oh No...We're Back To The 70's!

Light up the dance floor, create lightning effects for Halloween, or pretend like you're in a silent film from the 1920s! The possibilities are endless with this compact and easy-to-build strobe kit. All you need is the disco ball, a place to hang it, and some old 8 track tapes!

This kit reminds me of my early Popular Electronics kit days in high school! Yep, one of the projects was a Xenon tube strobe kit and I built it... to go with my polyester leisure suit, paisley shirt, and white shoes! Decades later, these strobes are as popular as ever!

Simple board construction includes a variable flash rate control from 2-20 flashes per second. From Velleman. (Do I still have the leisure suit? No... but it's probably still at the Salvation Army where I last left it!)

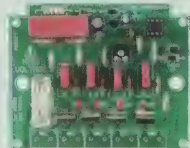
K5300 Xenon Tube Strobe Kit

KIT

\$19.95

4 Channel Running Light

- ✓ Create a dazzling light display!
- ✓ Controls 4 separate lights!
- ✓ On-board LED indicators
- ✓ Universal 110-240VAC operation



Run, Light, Run!

This neat little running light kit will power four incandescent lighting loads in sequence, so that the light appears to "travel" back and forth (just think of the LEDs on KITT from Knight Rider!)

KITT!+

Use it for a flashy light display on the dance floor or hypnotize unsuspecting victims with its rhythmic display! Speed is adjustable between 0.2Hz and 3.0Hz. Maximum load per channel is a whopping 450W at 240VAC and 230W at 115VAC. Input AC power is 110-240VAC depending on your output requirement.

On-board LED indicators show the actual output lighting display. Board measures 3.9" x 3.2" x 1.4" From Velleman. (Yikes, I remember KITT, maybe that's why all my cars are black!)

K8032 4 Channel Running Light Kit

KIT

\$29.95

LED Magic Message Wand

- ✓ Message floats in air!
- ✓ Fun at concerts, events
- ✓ High visibility red LEDs

Say It... In Mid Air!

KIT

This is as close as it comes to a "Magic Wand"! Shake it back and forth and brilliant messages seem to appear in mid-air! Six high intensity LEDs are microprocessor controlled to display messages and graphics that are pre-programmed into the wand.

You can also custom program a message of your choice! From amazing your friends, making a statement at a concert, or simply telling your loved one how you feel, the message wand can't be beat! Runs on two AAA batteries (not included), and the auto power off circuit gives you long battery life. Measures 6.4" x 1" x .9". From Velleman. (I tried to program it to say "I'm tired of writing catalog copy" but it was too many digits!)



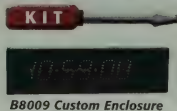
MK155 LED Magic Wand Kit

\$16.95



Multifunction Digital Clock

- ✓ Time, date, & temperature!
- ✓ Countdown, lap, scoreboard, and more!
- ✓ 6 1.42" high digits!
- ✓ Keychain RF remote control included



The Digital Clock... That Simply Has It All!

This clock kit features a mind-boggling array of functions! Set a timer, count down to a special date (a wedding, or more importantly the release of Spider-Man 3?) hook up a relay and use it as a temperature control... the possibilities are endless! Six IC's control 132 LEDs to form six eye-catching 1.42" tall digits that display practically any function you could expect from a clock radio type device -- and even some you wouldn't!

Features include: Time, date & temperature indication, selectable with toggle option. 1 second resolution chronometer with lap function. Count down function to a specific date (on the last day H:M:S are displayed.) Scoreboard function (two players or teams, count up to 199). Random generator from 00 to 99. 2 digit dice. Count function. Chime beep option. Relay output for temperature control or time alarm. US or Europe display option for time, date, degrees Celsius or Fahrenheit format.

All functions and settings are done through the included 433MHz RF wireless keychain remote control! Battery backup provided by a standard 9V, power supply is 12V DC / 300mA. Circuit board measures 10" x 3.2". Order the matching B8009 custom enclosure and faceplate for a really nice finished looking kit. (I'm going to get one of these and set the countdown clock to when I have to write next years catalog... then leave on vacation the day before!)

K8009 Multifunction Digital Clock Kit
B8009 Matching Custom Case Set & Faceplate For K8009
AC125 110VAC Power Supply

\$79.95
\$23.95
\$9.95



LCD Mini Message Board

- ✓ 124 character Eprom message memory
- ✓ Built-in editor
- ✓ RS232 interface

Create Your Own Message!

This is a neat little kit that comes complete with the attractive tilting enclosure and mount. A 16 character 1 line backlit LCD display shows everyone your custom message! The built-in Eprom message memory handles up to 124 characters. The message scrolls with adjustable speed.

The message can be created with the built-in message editor or via the RS232 interface for simple uploading and displaying. This little kit is perfect for exhibitions, advertising, greeting messages, serial display for equipment and much more. Runs on standard 9VDC battery at 100mA. Case measures 4.5" x 1.7" x 3". RS232 software available at our website, www.ramseykits.com. From Velleman.

MK158 LCD Mini Message Board Kit

\$19.95

LED Digital Clock

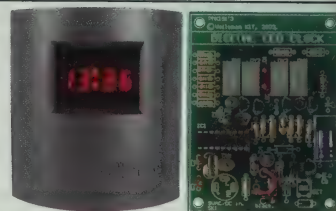
- ✓ Automatic timebase selection!
- ✓ 12/24 hour mode
- ✓ Battery backup



Digital Clock Kits Are Back!

Not your everyday clock kit! This digital clock kit features red 7 segment LED displays in a modern attractive case. Automatic timebase selection gives you the option of internal or line-frequency controlled 50/60 Hz.

Internal timebase has a fine tuning adjustment for precision time keeping. It can also be set for either 12 or 24 hour mode and features battery backup (3 AA batteries, not included) in case of a power failure. Runs on 9V AC or DC. Order our AC125 power supply. Comes complete with the custom designed case to give your clock a great finished look. From Velleman.

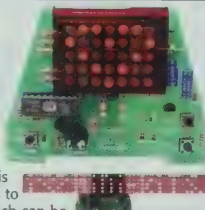


MK151 LED Digital Clock Kit
AC125 110 VAC Power Supply

\$34.95
\$9.95

Rolling Message Display

- ✓ 35 LED display!
- ✓ 16 character message
- ✓ Adjustable speed



Scroll Your Message!

Create your own scrolling or rolling message with this high visibility LED display! Contains 35 brilliant LEDs to light up each character of your custom message, which can be up to 16 characters.

Built-in message editor is simple to use. Press "set" to change a character, then use the "up/down" key to select the character and end with the "<" key. Includes a standby/run mode to restart the display. Runs on 9-12VDC and uses a Type 6LR61/6F22 backup battery if required. Measures 1.8" x 3.5" x 2.6". From Velleman.

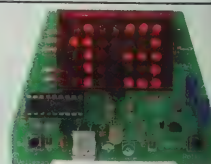
MK124 Rolling Message Display Kit



\$14.95

Rolling Clock Display

- ✓ Scroll the time of day!
- ✓ 35 LED display
- ✓ Adjustable speed



Scroll The Date & Time!

Similar to the MK124 to the left, this scrolling timepiece shows the date and time in alpha numeric characters in a smooth rolling animated display. A typical display would be "Jun-23 12:57".

No external editor is needed to set the date/time. Just select hours, minutes, month or day with the "select" key and enter the values with the "set" key. Time is set in the 24 hour mode, and displayed in the 12 hour mode. Runs on 9-12VDC and uses a Type 6LR61/6F22 backup battery if required. Measures 1.8" x 3.5" x 2.6". From Velleman.

MK123 Rolling Clock Display Kit



\$15.95

Dual Electronic Dice

- ✓ Displays two separate dice!
- ✓ Single or dual selection!
- ✓ Can't cheat with these dice!

A lot of board games require a roll of the dice. And a lot of dice rolls end up on the floor, knocking over the board tokens, the little green houses, or even worse, the red hotels! Not anymore, problem solved! Just hit the switch and the dice randomly cycle and slowly come to rest displaying the number! You can select either one die or a pair of dice, depending on the game. Bright LEDs display the same patterns as regular dice. And this pair of dice won't allow cheating!

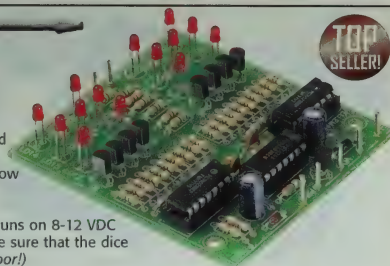
When the game is over, don't worry, the auto power saver switches them off after 30 seconds to save battery life. Runs on 8-12 VDC or a standard 9V battery. Board measures 3" x 2.8" and can be mounted in your own special enclosure. You can be sure that the dice won't end up on the floor! From Velleman. (Well, when the cheater isn't happy I guess he **could** throw it on the floor!)

K3400 Dual Electronic Dice Kit
AC125 110VAC Power Adapter

\$15.95
\$9.95

KIT

These Dice Won't Fall Off The Table!



TOP SELLER!

Shaking Electronic Dice

- ✓ Just give it a shake like real dice!
- ✓ Microprocessor controlled!

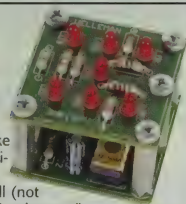
Shake, Don't Roll!

You don't have to throw it, just shake it and it acts just like regular dice! It rolls out slowly and flashes the last combination or "winning number"! Microprocessor controlled circuit is fun to learn. Runs on one 3V Lithium button cell (not included). Get two to simulate a pair of real dice to get "snake eyes" or "box cars"! Measures 1.4" x 1.4" x 1.3". From Velleman.

MK150 Shaking Electronic Dice Kit

KIT

\$11.95



LED Traffic Signal

- ✓ 4-way traffic signal!
- ✓ Automatic switching!
- ✓ Adjustable delay!

Sure To Stop The Traffic!

Impress your friends by building a really neat, simulated 4-way traffic signal light! Bright red, green, and yellow LEDs are positioned just like a 4-way signal, and automatically sequence. Adjustable timing allows you to change the delay, something we all wish we could do on the road! Runs on a standard 9V battery (not included) and draws only 15mA for long life. Perfect for model railroads, models, and any hobbyists that just want to build something really neat! Measures 2" x 1.4" x 4.5". From Velleman.

MK131 LED Traffic Signal Kit

KIT

\$7.95



TOP SELLER!

SMT LED Smiley Face

- ✓ Alternating flashing SMT LEDs!
- ✓ Can be worn as a pendant!

Smile...And Learn SMT!

Build this little attention grabber and learn about SMT at the same time! Measuring only 1" this smiley face can be worn as a pendant or just as a conversation piece. And don't worry about losing or damaging the parts; we give you extras! Requires a 3V Lithium Ion button cell. Measures 1.1" x .3". From Velleman.

MK141 SMT LED Smiley Face Kit

KIT

\$8.95



Electronic Roulette

- ✓ Spinning sound!
- ✓ Winner tune!

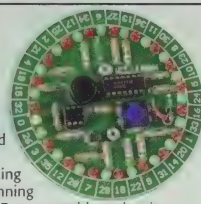
Easy To Spin This One!

This electronic version of roulette features a neat round PC board with 37 LEDs simulating a real spinning Roulette game! And when it spins, you hear the spinning sound with microprocessor technology! When the spinning stops and there is a winner you hear a winning tune! Easy assembly makes it a cool beginner kit that uses ICs. Runs on 3 AA batteries (not included). Board measures 3.6" diameter. From Velleman.

MK119 Electronic Roulette Kit

KIT

\$15.95



TOP SELLER!

4 Player Quiz Table

- ✓ Shows first button pushed!
- ✓ Quizmaster reset!

The Correct Answer Is?

Just like the TV game shows, you can have up to 4 players "on the ready" just waiting to be the first one to answer the question. But how do you know who's first? That's simple with the MK133! 4 player push buttons are provided. The first player to push their button is indicated with a latched on LED. Just like on TV! The "Quizmaster" button resets it for another round! If you have more than 4 players you can even daisy-chain two MK133s together for up to 8 players! Runs on a standard 9V battery (not included). Measures 4.3" x 3.1". From Velleman.

MK133 4 Player Quiz Table Kit

KIT

\$9.95



Wheel Of Fortune

- ✓ Electronic LED spinning action!
- ✓ Spinning gradually decreases!

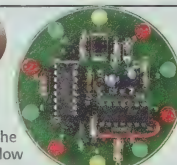
Where She Stops...

Acts just like the casino game! Just push the button and the 10 LEDs start showing a spinning action. They gradually slow down until the "winning" one remains lit. Push the button to start over again. Auto on/off assures a long battery life. Measures 2.6" x 1.3". Requires a standard 9V battery (not included). From Velleman.

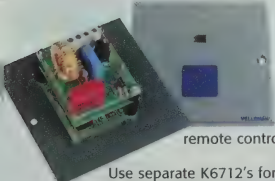
MK152 Wheel Of Fortune Kit

KIT

\$7.95



TOP SELLER!



KIT

Dim Those Lights Remotely!

Use this receiver for a wall mounted light dimmer in place of a standard light switch. Uses one channel of the 15 channel K8049 IR remote control on page 29 for light dimming function.

Use separate K6712's for different lighting circuits in the same room or throughout the house and assign different channels for each! Maximum dimmer load is 2A with a supply voltage of 110VAC at 60Hz. Note, as in all dimmers of this type, the K6712 is not designed for high current, high output halogen lights, or fluorescent lighting fixtures. From Velleman.

6712 IR Remote Controlled Dimmer Kit

\$52.95

IR Remote Controlled Dimmer Kit

- ✓ Fits into a standard switch box!
- ✓ For incandescent lights up to 2 amps!
- ✓ IR distance up to 23 feet!

**TOP
SELLER!****KIT****Detect It ALL With the SCI-Fi
Detector You Can Build!**

We realize you can't "beam down" to the surface of the planet, but you CAN have our Tri-Field Meter to detect and sense the fields around you! This really neat project actually senses and detects magnetic fields, RF fields, and electric fields! Even Mr. Spock would like this one!

The TFM3 has three separate field sensors that are user selectable to provide a really cool readout on two Sci-Fi styled LED bargraphs! Utilizing the latest technology, including Hall Effect sensors, you can walk around your house and actually "SEE" these fields around you! You will be amazed at what you see. How sensitive is it? Well, you can see the magnetic field of the earth...THAT'S sensitive! Also detect radiation from monitors, TV's, electrical discharge, and RF emissions.

You will have fun finding these fields and at the same time learn the technology behind them. Runs on 6VDC (4 AA batteries, not included). Includes a stylish matching case that will impress even the most fussy Klingons! Live long and prosper! (Our project engineer told me I could detect static in my hairbrush several feet away... But I don't have any hair!!!)

TFM3C**Tri-Field Meter Kit With Case****\$64.95****Speedy Personal Speed Radar Gun**

- ✓ Direct readout in miles/hour, kilometers/hour or feet/second
- ✓ 1/8 mile range for average car-sized object
- ✓ Earphone output to hear actual Doppler shift
- ✓ The nation's #1 science fair project!

KIT**TOP
SELLER!****YOU Be The Cop!
How Fast Was HE Going!**

Here's a kit that's not only a ton of fun for everyone, but useful too! This low cost microwave radar uses the same principle found in police units costing thousands more. You'll turn heads when you clock cars, planes, runners, boats, horses, bikes, races, or virtually any large object that moves. Speed readout is on two LED displays which can be set accurately (better than 1%) to show MPH, kilometers-per-hour, or even feet-per-second. An earphone output allows you to hear the actual Doppler frequency shift of moving objects - the theory upon which all radars operate.

Uses two 13 oz. coffee or juice cans for antenna (not included)... so start drinking! Antenna unit can be remoted up to 300 feet away. The SG7 is easy and informative to build. Our detailed manual not only carefully guides you to a finished unit but also tells you the hows and whys of Doppler radar. Even though the kit employs microwave circuitry no exotic tuning is needed. All critical sections are PCB stripline and calibration is as easy as pointing the SG7 at a fluorescent lamp! Your Speedy kit includes a deluxe black ABS plastic case with SPEEDY graphics for a neat professional look. Operates on 12 VDC. Electronics case: 3 5/8" x 5 3/4" x 1 1/8".

SG7
AC125 **Speedy Personal Speed Radar Gun Kit**
110VAC Power Adapter

\$59.95
\$9.95

Pre-Assembled Patriotic Pins!

LED Flashing US Flag Pin

- ✓ Proudly display the Stars & Stripes!
- ✓ 2 brilliant blue LEDs, 10 red LEDs
- ✓ Magnetic or pin attachment

**Be Proud, And Show It!**

Be a proud American and show your support with this neat little LED flashing pin! Factory assembled and tested and ready to pin on your shirt or jacket!

Subminiature circuit consists of 12 brilliant LEDs. Two high intensity blue LEDs accentuate the Stars while 10 more red LEDs proudly make the Stripes gleam! Truly a brilliant display of our flag. Can be pin or magnet attached. Measures 1" x 1". From Velleman.

LFB10 LED Flashing Flag Pin**Wired & Tested \$2.95****LED Canadian Flag Pin**

- ✓ Proudly display the Canadian Flag!
- ✓ 2 brilliant blue LEDs, 10 red LEDs
- ✓ Magnetic or pin attachment

**Be Proud, And Show It!**

At Ramsey, we're an hour from the border to our Canadian friends, and we think they too should have one of these little flashing flag pins! Be a proud Canadian and show your support with this neat little LED flashing pin! Factory assembled and tested and ready to pin on your shirt or jacket!

Same circuit and LEDs as the LFB10 to the left. Truly a brilliant display of the flag. Can be pin or magnet attached. Measures 1" x 1". From Velleman.

LFB11 LED Flashing Flag Pin**Wired & Tested \$2.95**

**For more NEAT STUFF check out PAGE 61
and don't forget www.ramseykits.com!**



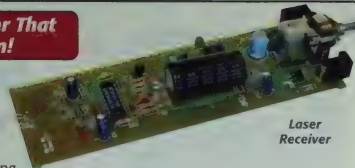
Laser Beam Audio Communicator

KIT

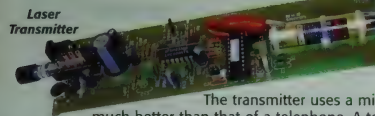
Send Audio Over That
Laser Beam!

- ✓ Modulated at more than 16kHz for excellent voice audio fidelity
- ✓ Uses standard pocket laser module for ¼ mile maximum range (included)
- ✓ Each kit includes one transmitter and one receiver
- ✓ Includes microphone and digital AGC circuit for full audio range control

TOP
SELLER!



Laser
Receiver

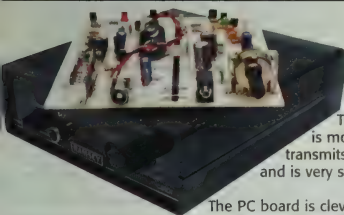


Now you can talk to your friends over one of the most secure long-distance transmission types available, a laser beam! Our new laser beam communicator allows you to talk with pretty good fidelity to your friends up to ¼ mile away just using a pocket laser pointer.

The transmitter uses a microphone or external audio to modulate a laser beam on and off at a rate of more than 16kHz so the audio fidelity is much better than that of a telephone. A telephone is limited to 3kHz; the LBC6K is limited to 6kHz. The receiver includes filtering to remove the 16kHz carrier and leave behind the high quality audio, and then boost the level for use with earphones. To improve the fidelity of the system the transmitter employs audio AGC on the microphone to boost weak audio, and reduce loud audio so that the listener never misses a word. Each kit includes a transmitter and receiver, and pocket laser pointer. This gives you a complete one-way audio path. If you need full duplex, or two way, buy two at the special price! Receiver and transmitter are designed to fit in two pieces of 2" PVC pipe for easy mounting and alignment. Each runs on a standard 9V battery, DC adapter or AC adapter (not included). Audio output drives a standard personal stereo headset. Your friends will be amazed when they see you talking over that red laser beam! *(My kids built a couple of these, and were really amazed! But then they asked me why they couldn't see their voice change the laser beam light...I told them...um...ask your Mom!)*

LBC6K Laser Beam Communicator Kit (Includes Receiver, Transmitter and Pocket Laser Pointer)
LBC6K2 TWO Laser Beam Communicator Kits, for Duplex or Two-Way Audio (Save \$5.00!)

\$39.95
\$74.95



KIT

Light Beam Communicator

Voice Over An IR Beam!

- ✓ Send your voice over light - even through windows!
- ✓ 30' to ¼ mile range!
- ✓ Receiver drives a speaker or earphone!

Transmits a modulated infrared light beam up to 30 feet without lenses, up to ¼ mile using simple lenses. Since the beam is modulated with a 30 KHz carrier (like AM radio) there is no effect from 60 Hz hum that is produced by indoor lighting. Easily transmits through windows - ideal for "bugs" or listening to IR television remote controls. The transmitter can use any type of mike and is very sensitive. The receiver employs an IR PIN diode detector and there is enough power to drive any loudspeaker or earphone.

The PC board is cleverly "scored" so you can easily separate the Transmit and Receive sections so they can be used individually to transmit at one location and receive at another. Units run on 9 to 12 VDC and will use a standard 9V battery. The LB56 has been a popular kit for years, and is a leading science fair project to show how you can send audio over Infrared! Comes complete with the custom case & knob set shown to give your project a great finished look. Case size: 5"W x 1½"H x 5¼"D.

LB56C Light Beam Communicator Kit With Case

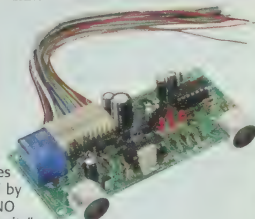
\$29.95

Ultrasonic Radar Module

Wired & Tested

- ✓ Uses a 40kHz ultrasonic beam!
- ✓ LED alarm and distance LEDs
- ✓ Buzzer and relay outputs!
- ✓ Factory assembled & tested, ready to go!

Sense And Detect By Distance
And Proximity!



The one-piece cousin to the Parking Radar Kit above, available factory assembled and tested for immediate use in your project!

A 40kHz ultrasonic beam measures the distance to oncoming objects and warns you in several different modes. A buzzer output provides a fast, slow, or continuous audible output. Relative distance is displayed with a 3-bar LED graph display. An alarm indication is provided by an LED indicator as well as a set of NO/NC relay contacts. Features adjustable alarm distance and a range of 7" to 8'. Output relay NC/NO 'relay' contacts are rated at 1A low voltage. Runs on 12VDC at 200mA max. Board measures 4.3" x 2" x .7". If you're looking for a "proximity" or presence sensor for a project or application, this is the perfect choice! Just interface it into your project and you're all set! From Velleman.

M125 Ultrasonic Radar Module, Factory Assembled And Tested

\$59.95

KIT

Don't Hit It...
Detect It!

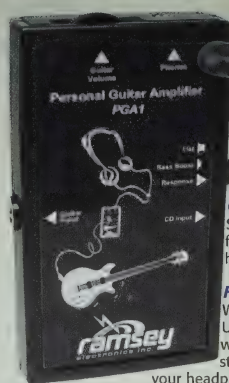
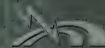
If you have problems parking your vehicle without running into things (like the garage, another car, a wall, etc!) then the Parking Radar kit is for you! Mount the sensor board on the rear of your car, truck, or trailer and it will detect the proximity of whatever you're getting close to!

Ultrasonic audio waves, higher than human hearing are used to "measure" the distance! The sensor board is connected to the detector that includes an audible alarm. The proximity can be adjusted anywhere from 2" to 5' and has a detection angle of 5 degrees. The uses of this handy little detector are endless, and save a lot of crumpled metal!

Running on 10-15VDC the Parking Radar is ideal for 12VDC vehicle power. Just connect a lighter plug cord and you're all set. The small sensor board measures 1.1" x 3.7". The main board measures 1.9" x 4.9". The boards can be custom installed in your vehicle, in your own case, or you can order the recommended enclosures below. From Velleman. *(My car needs one of these on both sides plus the front and rear bumpers!)*

3502 Ultrasonic Parking Radar Kit
3416 Recommended Case Set For Main Board
3407 Recommended Case Set For Sensor Board

\$39.95
\$79.95
\$79.95


New For
2007

KIT

Crank It Up Baby...
Crank It!

TOP
SELLER!

CRANK UP THE AUDIO AS LOUD AS YOU NEED!

So you're a guitar musician, and you live in an apartment... need we say more?! You would love to plug into your 100 watt HiWatt (my favorite brand!) amplifier and let it crank, but the neighbors probably wouldn't share your enthusiasm! The PGA1 was designed to give you hours of enjoyment playing your favorite electric guitar while isolating your family, friends, and neighbors from your music and your passion.

FOR USE WITH ALL TYPES OF GUITARS!

Whether you use an acoustic electric, electric, or bass guitar, the PGA1 gives you an adjustable volume output to your favorite headphones. Unlike a lot of practice amps, the PGA1 has a special bass boost to enhance bass guitar use. One practice amp for all your guitars! If you want to practice to your favorite music, the PGA1 has a standard style audio input to play to your favorite music! Just plug in your Walkman style CD player, MP3 player, or even the headphone output on your mixer board and you'll hear both your music source and your guitar in your headphones!

ONE WATT OUTPUT!

The PGA1 uses a powerful LM386 power amplifier to provide one watt of power to your headphones, or even a small speaker! It gets even better...use the PGA1 as a cheap and easy direct inserter box to match your guitar into an aux input of a stereo receiver amplifier or PA amplifier! It sounds Great! A standard 1/4" audio input connector is used for your guitar input, matching your standard guitar cables. A top mounted on/off/volume control adjusts the headphone output level through the full range. The small belt clip pocket size device runs on a standard 9V battery (not included). An LED indicates power-on and relative battery condition. The attractive compact case measures 4.5"H x 2.7"W x 1.1"D (114mmH x 69mmW x 28mmD) and can be worn on your belt or in your pocket. Available in kit to "learn as you build" or factory assembled and tested to get playing right out of the box! (I've got an SG with P90's and one of these now stays in the case with it!)

PGA1 Personal Practice Guitar Amplifier Kit **\$64.95**
PGA1WT Personal Practice Guitar Amplifier, Factory Assembled & Tested **\$99.95**



KIT

Wired & Tested

The New Generation
Stereo Headphone
Amplifier!

A few years ago we designed the SHA1 stereo headphone amplifier to provide an audiophile quality headphone signal from a radio or amplifier that only had a line output. The success was overwhelming! As described in previous catalogs and the web site, the largest manufacturer of high quality table radios recommended the SHA1 to their customers who wanted to use headphones with their radio.

Super Stereo Headphone Amplifier

- ✓ New for 2006, the next generation headphone amp!
- ✓ Separate volume, treble, bass, balance and loudness controls!
- ✓ Signal level clipping indicator LED!
- ✓ Stereo loop-through for multiple feeds with separate controls
- ✓ CD quality audio!

Well, it's been a couple of years and the need has been proven so we decided not to rest on our laurels with the success of the SHA1. We put our engineers to work, asking them questions like... what if a band wanted multiple headphones with separate level controls? And what about controls... how about the ability to tailor the audio characteristics to each user's preferences? What about multiple headphones from just one unit? When they got tired of all our questions they said "OK... you've got it, the new SHA2... the next generation headphone amplifier kit!"

Standard 3.5mm stereo audio headphone connectors are used for both looping input and dual outputs for simple Walkman style headphones. That was decided when I recently bought a hundred dollar set of Sony professional headphones that had the 3.5mm plug on them and an included 1/4" adapter; I figured it's time to concede to 3.5mm! And before you ask, we provide a dual RCA to 3.5mm stereo input cable with the SHA2 to match up with your standard unbalanced RCA line out connectors!

From there LM386's and LM1036's are used for audio processing providing nearly 1 watt of output to the normal 4-40 ohm headphones or speaker circuits. The loop-through inputs are properly isolated to prevent ground loop and hum problems when daisy chained or used in multiples. The dual outputs are great for that other person that just has to listen in too! We covered it all with the SHA2!

Runs on a built-in standard 9VDC battery but also has a rear power jack for 12-20VDC if you don't want to bother with a battery! If you're looking for a great headphone amplifier to simply listen to the line output of a radio, CD player, tape player, or receiver, our proven SHA1 is the answer. BUT... if you're looking for multiple outputs, looping inputs, daisy chained amplifiers, and bass, treble, loudness control, then try the SHA2, the next generation stereo headphone amplifier! Like the SHA1, it includes an attractive matching case measuring 5"W x 1 1/2"H x 5 1/4"D. (So I got myself one of those personal audio/video players, and of course my kids wanted to listen to the Pink Floyd video I just loaded it in... and you guessed it, the first prototype of the SHA2 came out and was a winner!)

SHA2 Super Stereo Headphone Amplifier Kit With Case **\$44.95**
SHA2WT Factory Assembled & Tested SHA2 With Case And Power Supply **\$79.95**
AC125 110VAC Power Adapter **\$9.95**



From DJ audio mixers to digital editing and production studios and interfaces, we have you covered! Check out our Professional Audio Equipment section on page 85, or visit www.ramseyaudio.com!



Stereo Headphone Amplifier

- ✓ Make your headphones sound GREAT!
- ✓ Use with table radios, CD players, tuners, and more
- ✓ Great as a basic preamp for any line level signal

So, you buy a really good radio or CD player, go to plug in your headphones, and there isn't a headphone jack! You find a line level jack, plug in your headphones, and they sound terrible. Sound familiar?

Most good quality gear lacks an earphone output, or if there is one, it is woefully poor quality. We developed this kit to help us listen to our mixers, reverbs, voice recorders and other audio goodies. We took a pair of LM-386 250 mW audio amplifiers, added volume controls, power supply and a handy, switchable, high-cut filter. A common 1/4" stereo earphone jack is used for the output - assuring compatibility with all stereo headphones - and RCA phono jacks accept standard line level input signals. There's plenty of volume and of course, the "Fi" is quite "Hi". Available in money saving kit form or fully wired and tested. Runs on 9 to 15 VDC. Includes an attractive matching case measuring 5" W x 1 1/2" H x 5 1/4" D. (Did you know the leading and most well known manufacturer of high-end table radios recommends the SHA1 to all of their customers?!)

SHA1C
SHA1WT
AC125

Stereo Headphone Amplifier Kit With Case
Factory Assembled & Tested SHA1 With Case And Power Supply
110VAC Power Adapter

\$29.95
\$64.95
\$9.95



KIT

Wired & Tested

TOP
SELLER!

No Headphone Jack?
NO Problem!



KIT

Subminiature 20W Audio Amplifier Module

22 Watts..And NO Heat!

- ✓ 20 Watts from one SMT package!
- ✓ Super efficient Class D design!
- ✓ Super clean output!
- ✓ No heat/heatsink concerns!

SPECIFICATIONS

Audio Output:	20W max
Signal/Noise:	102dB into 8 ohms
Total Harmonic Distortion:	Less than 1%
Line level	
Audio Input:	4 input gain settings
Gain Adjust:	Auto short to ground shutdown
Protection:	Auto short to Vcc shutdown
	Auto short together shutdown
	Auto thermal shutdown
Power Input:	8-18 VDC, 2.1mm connector
	(18VDC for full rated output)
Dimensions:	2.6" square, 1.43" diameter

This means that a small SMT part can deliver a full 20 watts of power without getting so much as warm! YES, I said SMT or Surface Mount! Now you can install this amplifier right inside your speaker enclosures, or wherever his nifty kit will fit, without worrying about a heatsink! Just look at the specs! Unique board can be "snapped" out into a small circle to be double face tape mounted directly to the back of a speaker! This IS a Surface Mount (SMT) kit, so you will need fine tip tweezers, magnifier, and a decent fine tip soldering iron! See assorted tools and accessories on page 71. (Who ever thought of 20 watts in a single SMT device; I still remember fighting with vacuum tubes to get 20 watts!)

JAM2
PS18

20 Watt Audio Amplifier Module Kit
18VDC Switching Power Supply, 1.7A

\$34.95
\$24.95

2 x 30 Watt Audio Power Amplifier

- ✓ Dual channel, 30W max per channel!
- ✓ Latest IC circuitry, fully protected
- ✓ Includes heatsink
- ✓ Perfect drop-in power amplifier

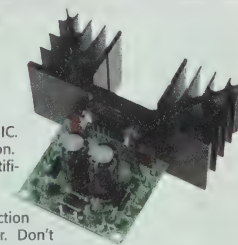
The Super Easy
Stereo Power Amplifier!

Audio Output:	2x30W max (2x15W RMS)
Signal/Noise:	98dB into 4 ohms
Total Harmonic Distortion:	Less than 0.07%
Channel Separation:	70dB
Frequency Response:	7Hz to 60kHz
Audio Input Sensitivity:	300mV/150k ohm
Protection:	Transient suppression on/off
	Auto overload protection
	Auto short circuit protection
	Auto thermal shutdown
Power Input:	2x12V AC/DC @ 50W/2A
Dimensions:	2.6" square, 1.43" diameter

This unique small audio power amplifier is designed around the TDA1521 IC. The IC is thermal, short circuit, and overload protected for reliable operation. One of the neat features of this amplifier is that it needs no additional rectifier and smoothing filter because it can also run on AC!

The small board and custom heatsink design make installation and connection a breeze. Just connect your inputs, your speakers (4 or 8 ohm) and power. Don't worry about overloads, or shorts on your outputs because it has automatic protection.

In addition, transient suppression is switchable on/off as desired. If you're looking for a sweet little inexpensive stereo amplifier, this is for you! Board, less heatsink, measures 2.8" x 2". From Velleman.



4A003

2x30 Stereo Audio Power Amplifier Kit

\$27.95



KIT

The Easy Audio Amplifier!

A super amplifier to use stand-alone or as part of a system. The small circuit board and heatsink make it easy to integrate this into any of your applications requiring a good amplifier. 7 watts maximum audio output (3.5W RMS into 4 ohm) provides a Total Harmonic Distortion of .05% with a Frequency Response between 20Hz and 20kHz. Input sensitivity is 40mV at 150k ohm.

Supply voltage is 8 to 18VDC @ .5A (15VDC for rated output). Automatic protection for shorted output and overload. Uses the newest TDA2003 IC for ultimate reliability. Includes the small but efficient heatsink shown. Board measures 2.2" x 1.4". From Velleman.

7 Watt Audio Power Amplifier

- ✓ 7 Watts output maximum power
- ✓ Overload and short circuit protected
- ✓ Includes heatsink

4A001

7 Watt Audio Power Amplifier Kit

\$10.95

**Karaoke Audio Interface**

- ✓ Sing along with your favorite music!
- ✓ Easy connections to your equipment!
- ✓ Automatic vocal reduction!
- ✓ Runs on a standard 9V battery!

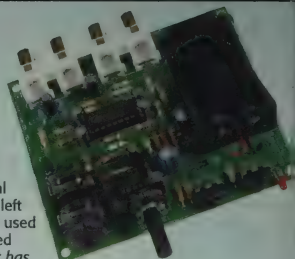
Get in tune with this simple yet full featured Karaoke "machine"! Just hook it between your CD player, MP3 player, or any other line level source and your amplifier, and get ready to sing!

Built-in vocal reduction circuit lowers the vocal tracks of most recordings automatically! That means you don't have to buy special soundtrack only CD's! Use any music from your existing library! Connections are simple. Standard RCA connectors are used for left and right music inputs as well as left and right outputs to your amplifier or receiver aux input. A standard 1/4" microphone jack is used that is common with most consumer microphones. Just hook it up, plug in your microphone, and start singing! A board mounted microphone level control is also provided to match your levels to the music. Measures 3.9" x 3.3" x 1". From Velleman. (Note, it has been proven that beer and alcohol consumption makes everyone sound better!)

MK140

Karaoke Audio Interface Kit

KIT

How Do You Think All Those Idols Started!

\$17.99



KIT

Wired & Tested

Feature Packed Digital Storage!

The BS2 provides up to 8 minutes of digital voice storage that can be broken down into a maximum of 8 separate stored messages. The message number is displayed on the 7 segment LED front panel display!

Recording/playing/stopping is similar to a standard recorder. You can start/stop/pause your message during both recording and playback! The BS2 has a built-in, highly sensitive electret condenser microphone for recording your voice messages.

However, you can also plug in an external microphone and even an external line level input for that professional studio sounding recording.

Playback-wise, the BS2 features adjustable line level outputs (two mono outputs for stereo inputs) to properly feed any application!

You can also directly drive a speaker with the built-in amplified speaker output and monitor the levels with the built-in headphone jack. Whatever your application, the BS2 has you covered! Runs on 12-15VDC. (See Page 6 for more information on the BS2C).

BS2C Bullshooter-II, Multi-Message Digital Voice Recorder Kit With Case Set
AC125 110VAC Power Adapter
BS2WT Factory Assembled & Tested BS2 with Case Set and Power Supply

\$69.99

\$9.99

\$99.99

Peak Hold LED Bargraph Meter

- ✓ Linear, log, or semi-log response scales
- ✓ Perfect for audio monitoring

Fast Response... PLUS Hold!

The PH14 series of LED bargraphs capture peak signals with great results! You can consider these bargraph units to actually be two complete LED bargraphs in one! There is the standard 10 segment bargraph with quick response, and a second set of circuitry expressly designed to catch the peaks and hold them for easy display.

We offer 3 models of the PH series bargraphs: the PH14 Linear display for voltage indication and general use, the PH15 Logarithmic 3 dB/step model for audio and RF power displays and the PH16 Semi-Logarithmic model, ideal for audio VU meters. Includes the custom case set for a neat and professional finished look. Case size: 5"W x 1 1/2"H x 5 1/4"D.

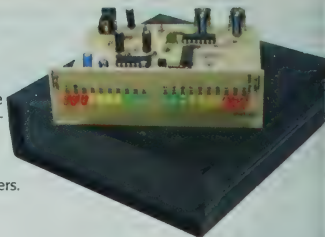
PH14C Linear Peak Hold Bargraph Meter Kit With Case
PH15C Log Peak Hold Bargraph Meter Kit With Case
PH16C Semi-Logarithmic Peak Hold Bargraph Meter Kit With Case
AC125 110VAC Power Adapter

\$34.99

\$34.99

\$34.99

\$9.99

**Pocket Audio Generator**

- ✓ Digital waveform generation
- ✓ Stereo out, dual RCA plugs

Test Those Inputs!

A perfect test source for stereo line inputs. Provides 50Hz, 100Hz, 1kHz, 10kHz, & 20kHz tones, plus 32 bit digital pink noise. Output is line level to two standard RCA plugs. Runs on two CR2016/2025 batteries not included. Measures 3.4" x 2" x 1". From Velleman.

K8065 Pocket Audio Generator Kit

KIT

\$29.95

**Pocket Vu Meter**

- ✓ LED bargraph display
- ✓ Built-in microphone

Watch That Music!

Hand held audio level meter that fits in your pocket! Built-in mic picks up music and audio and displays it on an LED bargraph. Includes enclosure shown. Runs on one 3V Li-Ion button cell, not included. From Velleman.

MK146 Pocket Vu Meter Kit

KIT

\$9.99

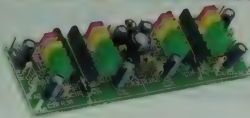


For professional audio meters with advanced capabilities, check out the AVM2050 and DVM805 on page 68!



Dual Stereo Vu Meter

- ✓ 4 channels, 5 LEDs per channel!
- ✓ Great sensitivity!
- ✓ Compact PC board
- ✓ Runs on 14-18VDC



Match Stereo Levels At A Glance!

A VU meter displays the average volume level of an audio signal, providing a good indication of just how loud something is, and with its dual stereo LED indicators, this kit is a great way to compare two sets of levels side by side. A total of 4 display channels indicate relative levels all on a small compact PC board ready to install in any of your audio applications. Standard green, yellow and red square LEDs are used throughout.

SPECIFICATIONS	
Indication:	-13, -8, 0, and +3dB
Sensitivity:	0dB = 0.775Vrms (adjustable)
Supply Voltage:	14-18VDC at 62mA
Dimensions:	1.1" x 3.9"

K2668 Dual Stereo Vu Meter Kit

KIT

\$19.95

Digital Voice Changer

- ✓ Alter your natural voice!
- ✓ Hi pitch, low pitch, vibrato, etc!
- ✓ Built-in microphone!
- ✓ Great for parties!



You Aren't Who You Are!

This voice changer kit is a riot! Just like the expensive units you hear the DJ's use, it changes your voice in a multitude of effects! You can sound just like a robot, you can change the pitch of your voice variably from low to high. For even more effect, add vibrato effect to your voice! Great for parties, recordings, bands, and the ever popular "prank phone calls"! Not as though we endorse those incredibly funny prank phone call CD's, TV shows, and DVD's!!! Speaker output provides a powerful 1.5W output at 4 ohms. A line output is also provided to interface into your audio equipment... or telephone coupler! Runs on a standard 9V battery (not included). Board measures 3" x 1.8". From Velleman (*No, I only have all those CD's and DVD's for research purposes!*)

MK171 Voice Changer Kit

KIT

\$12.95

Siren Sound Effects Generator

- ✓ Generates 4 separate sounds!
- ✓ Includes on/off switch!
- ✓ Includes PC mounted speaker!
- ✓ Runs on a standard 9V battery!



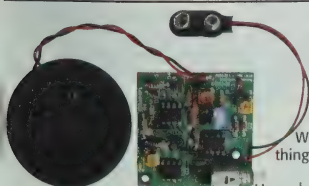
This Little Kit Is A Riot!

This fun little sound generator is more than a siren. Once assembled you can create your choice of 4 different sound effects: Police siren, fire brigade, emergency vehicle, and laser gun! Use the laser gun to go on a rampage, and then just call in the police and fire vehicles to clean up your mess! Wow, how's that for catalog writing imagination! Variable pitch control allows you to customize the sound! Built-in PC board mounted speaker makes this kit ready to go when you're done. Runs on a standard 9V battery (not included). Measures 2.4" x 1.6". From Velleman. (*Did I say imagination?!*)

MK113 Siren Sound Effects Kit

KIT

\$11.95



KIT

**Doesn't Crawl...
Just As Annoying!**

With the incredible popularity of the "Electronic Dripping Faucet" kit (EDF1, page 35), we figured we had to come up with something equally unique! Well, this one is unique...to say the least!

How about an electronic cricket? Sounds just like those little black critters that seem to come from nowhere and annoy you with their chirp-chirp! And just like the little critters, we made it sensitive to temperature so when it gets warmer, it chirps faster! That's right, you can even figure out the temperature by the number of chirps it generates! Just count the number of chirps over a 15 second interval, add 40, and you have the temperature in degrees Fahrenheit! Not as fancy as a digital thermometer, but much more unique! And unlike its little black predecessor, the ECS1 operates from around 50°F to 90°F! I don't think there are too many real crickets chirping away at 90°F! A unique thermistor circuit drives a few 555 ICs providing a variable chirp that is guaranteed to annoy everyone around you! But just watch her faces when you tell them the temperature outside! Runs on 9-12VDC or a standard 9V battery (not included). Includes everything shown, including the speaker and battery clip, to make your cricket project a breeze. (*If it drives you nuts you probably can squish it under your feet to make it stop...but that voids the warranty!*)

CS1 Electronic Cricket Sensor Kit

\$24.95

Effects Sound Generator

New For 2007

- ✓ 10 different sound effects!
- ✓ Speaker and line level outputs!
- ✓ 1 watt audio output
- ✓ Runs on 8-10VDC



Annoy Your Enemies, Amuse Your Friends!

This pocket-sized kit is a great attention-getter! Just attach to any speaker and select from any of the following sound effects: Machine gun, European siren, "Phasor" gun, Racing car with motor howl, Screaming of car tires on a curve, Explosion, Mortar fire followed by explosion, "Wild charge tune," "Snake charmers tune," and a US siren. Ideal for DJs, parties, etc. Powerful 1 watt output drives any speaker and line level output feeds any standard amplifier aux input. Runs on 8-10VDC or a standard 9V battery. From Velleman. Kids love this kit. (*A little more than their parents do after it's completed and operating!*)

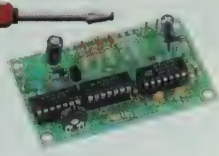
K4401 Special Effects Sound Generator Kit

\$26.95

Pink Noise Generator

KIT

- ✓ Pseudo random digital noise!
- ✓ Adjustable from 30-100kHz!
- ✓ Optimize your acoustics
- ✓ Runs on 1-12VAC or 12-15VDC



Think Pink!

Pink noise is a great tool for testing and equalizing rooms (especially living/listening rooms) to make sure your sound system is giving you the best possible audio. Using this generator and a spectrum analyzer, you can equalize your room to exacting specifications. Why Pink noise? Unlike white noise, which has equal power per Hz, pink noise is filtered to give equal power per octave or per 1/3 octave. This means pink noise contains more of the frequencies that the human ear is attuned to, making it ideal for acoustic equalization!

If desired this kit is easily modifiable to produce standard white noise as well. Dimensions: 2.8" x 1.7". From Velleman.

K4301 Pink Noise Generator Kit

\$18.95

Electronic Metronome

New For 2007

- ✓ Audible and visual indication!
- ✓ Adjustable volume and BPM!
- ✓ Built-in speaker!
- ✓ Compact size!



Keep Perfect Time!

For century's musicians have used metronomes to keep a standard tempo, but mechanical wind-up metronomes are bulky and require winding. On the flip side, newer pre-assembled electronic metronomes tend to be pricey and cluttered with unnecessary features. This kit is perfect for anyone looking for a simple, compact, and inexpensive metronome that they can build themselves! Features controls for volume and beats per minute. The PC mounted speaker gives you a pleasant timing beat and a board mounted LED gives you visual indication for the "silent mode" of operation. Runs on a standard 9V battery (not included). From Velleman.

MK106 Electronic Metronome Kit

KIT

\$9.95

Electronic Chirping Cricket Sensor

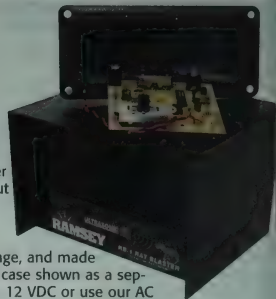
- ✓ Chirps like a real cricket!
- ✓ Senses temperature and changes its chirp accordingly!
- ✓ You can actually determine the temperature and amaze your friends!

**Rat Blaster Varmint Repeller**

KIT

- ✓ Covers over 3,000 square feet
- ✓ Programmable frequencies for optimum repulsion
- ✓ Compare with units costing \$150
- ✓ Build in your own case or wall, or use our custom case!
- ✓ Runs on 12VDC or our 110VAC power supply

**Eliminate Them...
Without Any Harm!**



Sure, you've seen these things advertised before. Big claims and a huge price! Well we won't carry on about how you'll be able to keep Godzilla out of your garbage cans, but we will say that this unit will do a nice job of keeping the neighborhood dog, cat, or deer away. Here's the story. We had a problem at the boss's house keeping the deer out of the garden. The boss, being the electronic nut he is, bought one of these things and tried it. It worked pretty well so he planned to get another for protecting the shrubs, but at \$150 a box he figured it was cheaper to build his own.

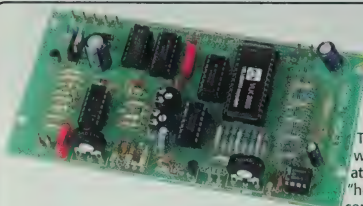
Here it is, cheaper and better! We've increased the power, put in a top-quality transducer (by Motorola), upgraded the frequency range, and made it affordable! A lot of customers prefer to build it into their own case (or even a garage or shed wall!) so we offer the custom metal case shown as a separate option. We're not thrilled by the price increase in the custom case... but the manufacturing costs skyrocketed for this! Runs on 12 VDC or use our AC adapter. (Hmmm, I wonder if this will work on kids...)

RB1 Rat Blaster Rodent and Animal Repeller Kit
CRB Matching Case & Knob Set for RB1
AC125 110VAC Power Adapter

\$59.95

\$39.95

\$9.95



New For 2007

**Automatically "Barks" At
The Sound Of Noise!**

KIT

Electronic Watch Dog

- ✓ A barking dog on a PC board!
- ✓ Two barking sounds!
- ✓ Automatic sound detection!
- ✓ Eats very little and never sleeps!

dry or moist dog food. Instead it eats 2-8VAC or 9-12VDC! And it's a little guy; only 5.6" x 3"! You can order the handy power supply below. If you're not building the doggie into your own case or application, you can also order the custom case set below. From Velleman.

K2655 Electronic Watch Dog Kit
WCAH2851 Matching Case Set
AC125 110VAC Power Supply

\$32.95

\$7.95

\$9.95

Electronic Multi-Tone Chime

KIT

- ✓ 1, 2, or 3 tone selectable!
- ✓ Adjustable tone and volume!
- ✓ Uses batteries or doorbell supply!

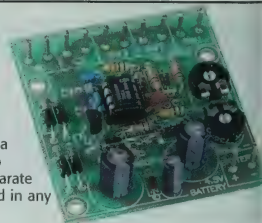
Replace That Old Bell!

This electronic chime generates three different available chime tones which can be selected by individual switch closures. Perfect for replacing that old doorbell buzzer or bell and can handle three separate door sounds! The IC design provides a clean audio output of a third of a watt into any standard 8 ohm speaker (not included). The circuit runs on 4.5VDC (three 1.5V batteries, not included) or 6 to 9VAC which is normally provided by the old doorbell transformers! Just use that if you have one. Terminals are included for three separate switch contacts, speaker output, AC, and 4.5V battery connections. The compact board measures 2.1" x 2.3" and can easily be installed in any suitable location. For a great finished look, order the recommended case set below. From Velleman.

K6600 Electronic Multi-Tone Chime Kit
G416 Recommended Case Set For K6600

\$24.95

\$7.95

TOP
SELLER!

KIT

Wired & Tested

**Grab Those Numbers
Right Off The Air!**



Dialed phone numbers, repeater codes, control codes, anywhere touch-tones are used, your TG2 will decode and store any DTMF tone it hears. A simple hook-up to any radio speaker or phone line is all that is required. Since the TG2 uses a central office quality decoder and a FLASH microprocessor it will decode digits at virtually any speed! The FLASH storage capability of the microprocessor means you can store 640-digits for 10 years - even with the power turned off!

The bright 8-digit LED display lets you scroll through the stored numbers at your leisure. To make it easy to pick out numbers or codes, a dash is inserted between any group or set of numbers that were decoded more than 3 seconds apart. Added features from its TG1 predecessor include an onboard RJ11 phone jack for easier phone line interfacing and an output latch jack offering an external trigger source when a user specified number (1 to 60 digits!) matches the monitored input! The TG2 runs on any 8 to 15 volt DC power source and is both regulated and crystal controlled for the ultimate in stability. Includes the matching professional case set shown, measuring 5"W x 1 1/2"H x 5 1/4"D.

TG2C Tone Grabber Touch-Tone Reader Kit With Case
AC125 110VAC Power Adapter
TG2WT Factory Assembled & Tested TG2, With Case And Power Supply

\$69.95

\$9.95

\$119.95

Tone Grabber Touch-Tone Reader

- ✓ Built-in RJ11 phone jack for easy hook-up and line monitoring
- ✓ Super fast-capture numbers off the radio, repeater, phone line, etc.
- ✓ Big, bold 8-digit display with automatic insertion of dashes between number groups



Super Telephone Speakerphone

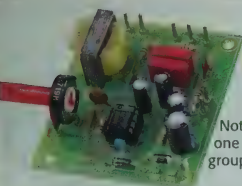
- ✓ Needs no battery when connected to phone line
- ✓ Can also be used as hands free intercom!
- ✓ Effective from anywhere in the room

The Ramsey speakerphone kit efficiently replaces a cluster of add-on phone gadgets to give you what you really want in the shop or office: the ability to answer incoming calls and continue what you're doing while talking from anywhere in the room. We designed this device because we needed such units at work, so the technicians could answer a telephone question while checking a manual or taking a voltage reading. Well, quite a few of our prototypes found their way home and pretty soon we realized that it would make a great kit!

Super for family and conference calling. Or, as we discovered here, connect two together for a completely hands-free intercom - ideal for linking the shop with the rest of the house. Imagine how handy it would be to simply answer back from anywhere in your shop - without stopping what you're doing. It's like linking two rooms together into one. The real beauty of this kit is: 1 - it needs no battery when connected to the phone line and 2 - it can be simply connected to the phone line by itself without using an extra telephone. For intercom use, a regular 9 volt battery powers the unit. Includes built-in electret microphone; just add your choice of speaker. Includes an attractive matching case measuring 5"W x 1 1/2"H x 5 1/4"D.

SP1C Speakerphone Kit With Case

\$39.95



New For 2007

KIT

Drives Speakers Or Mixers!

Not a speakerphone, but a high performance isolated input amplifier that connects directly to a telephone line. Unlike a lot of amplifiers, this one provides both speaker output and line output. Speaker output is perfect for "group listen" applications with standard telephones for group gatherings without the inconvenience and interruption of vox operated speakerphones.

The K4900 also features line level output designed to be connected to the aux input of any standard audio mixer or amplifier. This makes it perfect for radio stations, home broadcasters, and larger applications that need to connect their phone line into their systems. Features a standard isolation transformer input for zero loading of the phone line. Speaker output is a half watt into 8 ohms. Line output is 0dB (.775Vrms). The circuit runs on 7-10VAC or 9-12VDC at 150mA. Board measures 2.5" x 2.1". Designed to be built into existing equipment, but if you need a stand alone amplifier the recommended housing is the G416 below. From Velleman. (Group listen is great, no speakerphone interruptions yet everyone in my office can hear!)

K4900 Telephone Amplifier Kit
G416 Recommended Case/Housing For K4900

\$12.95
\$7.95

Phone Recorder Controller

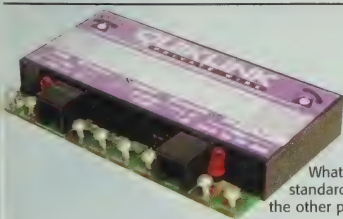
- ✓ Undetectable on phone line
- ✓ Needs no battery, operates on telephone line power

Keep a record of all your telephone calls - automatically. The TT1 connects anywhere on the phone line and will control any battery powered tape recorder that has standard microphone and control jacks. The recorder automatically starts and stops whenever the phone is used and records both sides of the conversation with excellent fidelity. Simply plug the TT1C into your recorder's microphone/control jacks, push "record" and you're all set. The moment there is activity on the phone line your recorder will start up and record both sides of the conversation. When the conversation is over, it will automatically stop your recorder!

Super-easy one hour assembly and a manual that tells you not only how to build the kit, but how it works as well. The controller is easy to use and looks great in the included custom case shown. Case size: 5"W x 1 1/2"H x 5 1/4"D. The TT1C is also available factory assembled and tested and ready-to-go! (I had something like this connected to my 3" reel-to-reel portable recorder from Lafayette...Yikes am I old!)

TT1C Tattle-Tale Recorder Controller Kit With Case
TT1WT Factory Assembled & Tested TT1 With Case

\$29.95
\$59.95



Wired & Tested

Fully Automatic, Just Go Off-Hook!

What is a telephone ring down, you may ask? They have been used for years as dedicated communications paths between two standard telephone sets. Over a single pair, with a phone at either end, merely going off hook with one phone immediately rings the other phone. When picked up you have a complete intercom path to talk. No dialing necessary! What are they used for?

Vell, on the intercom or communications side they are commonly used for elevator phones, guard post hotlines, door entry phones in homes and offices, and on commercial job sites for rugged intercoms. But that's just the beginning!

an be used to test ringing, answering, and signal path conditions of devices, two-wire off premises extensions, PABX to Key System tie lines, and more. Measures 5/8 x 4 1/4 2 1/2 inches and is totally encapsulated in UL 94V-0 flame-resistant epoxy resin for long, reliable operation.

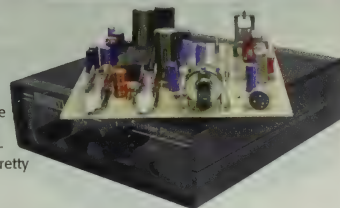
ing pattern is selectable to continuous ring; 1 on 1 off; 2 on 2 off; 2 on 4 off. Runs on 12 VAC at 500 mA (Power Transformer is included) or 20-28 VDC at 300 mA. If ou work on telephone equipment or are just looking for an ultra reliable telephone, the QLRD1 can't be beat!

QLRD1 Automatic Telephone Ring Down, Factory Assembled & Tested

\$89.95

KIT

High Performance Motorola Chip!



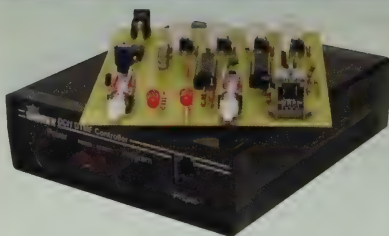
Group Listen Telephone Amplifier

- ✓ Connects directly to a phone line!
- ✓ Speaker and line outputs
- ✓ High performance, small size



Automatic Telephone "Ring Down"

- ✓ Instant off-hook ringdown access between two telsets
- ✓ Private full duplex intercom with selectable ringdown
- ✓ Instantly generates call on offhook, no dialing!
- ✓ Test ringing, answering, and signal-path functions of any telecom device



KIT

**Full Control From
Any Telephone!**

DTMF Controller Interface

- ✓ Remote control from any DTMF device!
- ✓ Call in from the road to turn on your lights...and more!
- ✓ User configurable security code for your protection
- ✓ User feedback tones confirm remote operation success!

This microprocessor controlled DTMF decoder fits the bill for multiple applications. Remotely control almost any device with the built-in relay circuitry. The DCI series unit continually monitors your phone line and looks for the proper user programmed security code. Once it is heard, the user may select which of the trigger relays to turn on or off (2 or 4 outputs, model dependant). Feedback tones from the DCI are then sent back over the line to confirm your selection. No more wondering if your commands are carried out as is commonly found with other similar devices! Now you can call home and, when your answering machine picks up, control lights, security systems, or just about any number of other custom applications!

Provides four 5 Amp (1250VA AC/150W DC) relay outputs, each with its own sure grip screw terminal. Requires 9-18VDC at 300 mA. Our standard AC125 110VAC power adapter is available. The matching case & knob set is included to make your kit look professional and attractive in any setting.

DC11C
AC125 **DTMF Controller Interface Kit With Case**
110VAC Power Adapter

\$39.95
\$9.95

Infra-Red Switch Control Interface

- ✓ "Learns" the signal from your existing IR remote controls!
- ✓ Controls up to 4 separate relay outputs at 3 amps!
- ✓ Provides latch on/latch off functions
- ✓ Includes matching case set

KIT

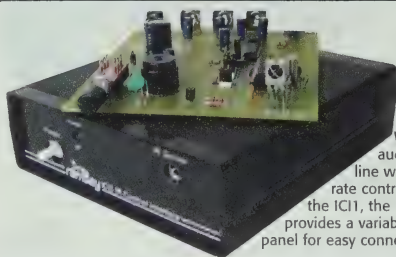
**Push On, Push Off...
ANYTHING!**


One of the latest in the series of ICI Infra-Red interfaces from Ramsey! Now it's a breeze to control any on/off function with any button of your existing IR remote control! That's right, any button of your EXISTING 38 kHz remote control!

Using the latest Motorola microcontroller as its "brain," the IC11 learns the IR code from any existing IR remote controller. An IR photodiode detects the IR remote and controls up to 4 separate relays. The relays turn on and turn off with a simple push of the remote control button programmed! The heavy duty relays are rated to switch up to 3A, so the control capabilities are endless! The relay outputs are brought out to 2-pin headers on the rear of the case to accept standard wire connections. If you are looking to control audio volume with a standard IR remote control, check out our IC12 IR Audio Control Interface Kit below. It learns your IR remote control functions and can be programmed to provide a variable "volume control" to control any line level audio source! Operates on 7-15VDC or our optional AC125 power adapter. (push on, push off... the pusher!)

IC11C
AC125 **Infra-Red Switch Control Interface Kit With Case**
110VAC Power Adapter

\$39.95
\$9.95



KIT

**Control ANY
Audio
Equipment!**

Infra-Red Audio Control Interface

- ✓ Controls audio levels from any of your equipment!
- ✓ "Learns" the signal from your existing IR remote controls!
- ✓ 2-Channel RCA audio in/out connections
- ✓ Includes matching case set

We took our IC11 IR Switch Control Interface (above) and went one step further! What if you want to control the audio level of something and there is no existing remote control function? Now it's simple! The IC12 simply goes in line with any audio source to give you full variable control with ANY existing IR remote control! Dual channels with separate controls give you the option of stereo or two separate audio sources! Using the same Motorola microcontroller brain as the IC11, the IC12 learns the IR code from any existing 38 kHz IR remote controller. An IR photodiode detects the IR remote and provides a variable up/down control of your audio source. The IC12 has dual RCA line level input and output connectors on the rear panel for easy connection. Connect it in line with your audio component and you're all set!

Check out our IC11 (above) if you're looking to control on/off functions like lights, fans, etc. Also check out our IC16 (below) that provides a digital 4-bit output for customized applications! At Ramsey, we give you full control...of your remote control! Operates on 7-15VDC or our optional AC125 power adapter. (One of our guys runs his 2-meter and 440MHz amateur receivers into his house intercom, and separately controls the volume!)

IC12C
AC125 **Infra-Red Audio Control Interface Kit With Case**
110VAC Power Adapter

\$39.95
\$9.95

Infra-Red Digital Control Interface

- ✓ Generates a digital output from any IR remote button!
- ✓ "Learns" the signal from your existing IR remote controls!
- ✓ Plugs into your existing projects and applications
- ✓ The perfect experimenters kit!

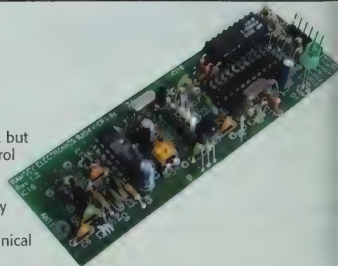
KIT

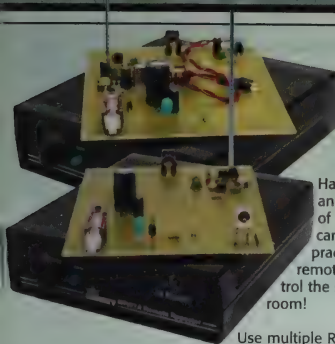
**Create Any
Digital Output!**

We gave you on/off switch control with our IC11 (above) and we gave you variable audio control with our IC12 (also above), but now we've taken IR remote control one step further! The IC16 gives you a custom digital output from your IR remote control buttons! Using the same Motorola microcontroller brain as the IC11 and IC12, the IC16 learns the IR code from any existing 38 kHz IR remote controller. Once learned, a push of the button generates a 0-15 coded output on 4 lines depending on 16 different unique codes learned from the IR controller! The board uses two standard 6-pin 0.1" center connectors for easy mounting, plug-in, and wiring. Out of IR range and want to get really creative? Use the IC16 with our RRW1AC (page 29) which converts your IR to RF. The IC16 receives the RF and converts it to a 1 of 16 digital signal output! Just use your technical imagination (The heart of Ramsey's 35 year history!). Operates on 7-15VDC.

IC116 **Infra-Red Digital Control Interface Kit**

\$39.95





KIT

Wireless IR Remote Repeaters

Don't Be A Control Freak!

- ✓ Works with almost any remote control, does not need to be programmed!
- ✓ Transmitter converts your IR remote to RF
- ✓ Receiver converts transmitted RF back to your IR signal
- ✓ Operate from TV to 18V AC or DC

Have you ever been frustrated with the range of your remote controls? Tired of having to bounce your IR remote off ceilings and walls? Do you want to run your system from another room or floor? This is the answer to your prayers! Extend the range of your remote controls through walls, around corners, and even from outdoors. Unlike store bought units, error correction can be turned on for pulse width regeneration. The foolproof IR repeater! Take advantage of wireless technology with this practical kit, which almost anyone can use. The RRW1A and RRW1B pair allow you to rebroadcast your AV Infrared 38 kHz remote controls wirelessly on 433 MHz up to 100 feet. Broadcast through walls, doors, floors, and ceilings. Use the pair to control the satellite receiver downstairs, and watch it upstairs! Be outside and control the tunes on your stereo system in the living room!

Use multiple RRW1A's to broadcast from multiple locations in the house to the single RRW1B receiver near your equipment. Feed the control freak in all of us! Both units operate on 7-18V AC or DC. For continuous operation, use our AC125 AC power adapter. Sleek matching cases measure 5"W x 1 1/2"H x 5 1/4"D. (Don't you hate it when you go to someone's house and they have a dozen remotes on the coffee table? Don't they know about universal or smart remotes?)

RRW1AC	Wireless IR/RF Transmitter Kit With Case	\$29.95
RRW1BC	Wireless RF/IR Receiver Kit With Case	\$34.95
AC125	110VAC Power Adapter	\$9.95
RRW1P	Complete Package, RRW1A With Case, RRW1B With Case, Two AC125 Power Adapters (\$84.80 Value)	\$74.95

Wired IR Remote Receiver/Repeater

KIT

- ✓ Control those components anywhere in the house
- ✓ Works with any 38 KHz carrier IR remote
- ✓ Indicator shows IR reception
- ✓ Operates from 6V to 16V AC or DC

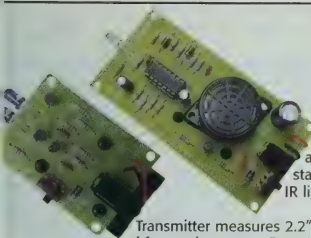
Don't Rearrange Your Room!



Have you ever been so frustrated with the range of your remote that you have to go through the effort of rearranging your entertainment room? Tired of having to bounce your IR remote off ceilings and walls? Do you want to control your system from another room? The RR1 is the answer for you. We use a super integrated IR detector with bandpass filtering, AGC, and RFI shielding. Receiving range is easily over 35 feet! It extends the range of your IR remote controls to distances limited only to the wire length you use!

Locate the IR receiver in a convenient location reachable with your existing remote control, and run the IR LED extender cable near the front of the equipment you wish to control. It's that easy! Keep your expensive components safely locked away, and let the RR1 be the key to control them! While you're building this kit, learn the theory of how IR remotes work and how we use the power of a microprocessor to provide you with flawless performance and the added benefit of error correction! The included matching case set measures 5"W x 1 1/2"H x 5 1/4"D.

RR1C	Wired IR Receiver/Repeater Kit With Case	\$29.95
AC125	110VAC Power Adapter	\$9.95



KIT

Just Break The Beam!

IR Light Barrier Alarm

- ✓ Up to 13' range!
- ✓ Invisible light beam!
- ✓ Audible and visible alert

Create an invisible beam of light that will sound (and light) an alert whenever it is broken! Uses IR emitting LEDs for the transmitter to send a powerful beam up to 13 feet! Once setup and armed a break in the IR beam will sound a built-in 85dB audible alarm and illuminate a red alert LED on the receiver. Separate transmitters and receivers are provided both with run on standard 9V batteries (not included). Great for store entrances, to set boundaries or for science fair projects to demonstrate how IR light works.

Transmitter measures 2.2" x 1.6". Receiver measures 3.9" x 2.0". On/off switches are included on both. Because IR light is used, this is not recommended for outdoor use. From Velleman. (I'm putting one by my office door so I can look busy writing catalog copy when the boss walks in!)

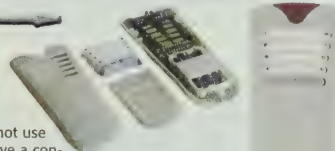
IK120	IR Light Barrier Alarm Kit	\$9.95
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15 Channel IR Hand Held Remote Transmitter

KIT

Control A LOT Of Stuff!

- ✓ 15 channels with 4 separate addresses!
- ✓ Professional rubber keypad!
- ✓ Compatible with multiple receiver kits
- ✓ Includes stylish case



remote control is here to stay! Virtually all consumer electronic equipment is equipped with its own IR remote. So why not use it to control your own projects, circuits, or household functions? Well, up to now there was no easy and "stylish" way to have a consumer attractive remote to use with your equipment. Consider that problem solved with the K8049 remote! It features 15 separate channels that can be programmed to control anything using compatible receivers and receiver circuits. In addition the K8049 features 4 separate addresses to allow the use of multiple receivers in one room!

You can use this one single remote with the MK161, MK163, M164, K6712, and K8050 receivers featured on the following pages. It really doesn't get much easier than that! Includes built-in LED function indicators and runs on three standard AAA batteries (not included). From Velleman.

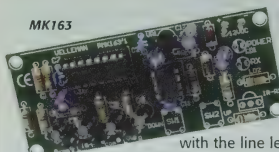
8049	15 Channel IR Transmitter Kit	\$44.95
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2 Channel IR Remote Receiver

- ✓ Two channel relay output!
- ✓ 'Learn mode' settings are stored in EEPROM
- ✓ Toggle or pulse selection for each channel

Use the sleek K8049 as the main remote for your IR control. Perhaps add an automatic light dimmer with the K6712 on page 19. With 15 channels available on your remote you've got lots of control room to spare! This tiny little receiver gives you two separate channel functions, providing relay closures for each! Each control function can be set for either toggle or pulse mode to fit your specific application. Plus, all settings are stored forever in the built-in EEPROM! Channel and acknowledgement of reception are indicated on the attached LEDs. Relay outputs are rated at 24VAC/VDC at 1A. Runs on 12VDC at 0.75mA and measures a small 1.7" x 1.9" x .6". From Velleman.

MK161
IR 2 Channel Remote Receiver Kit
\$19.95

MK163
KIT

Control Line Level Stereo Levels Between Units!

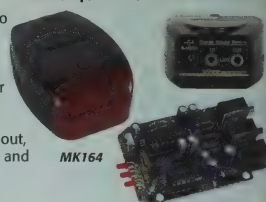
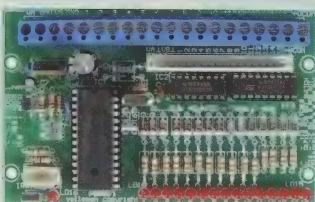
Now that you have your K8049 remote control, look how simple it is to control stereo audio levels between, let's say, your PC and your stereo amplifier! Just put this little board in line with the line level audio output of your source and your amplifier, program it, and you're all set! Provides continuous "up" and "down" control from 0dB to -78dB attenuation in 62 steps! Also features audio "mute" with "auto fade-in". The tiny board is small enough to be built inside any existing unit you wish to control audio levels on. Runs on 9-12VDC for easy connection to existing power supplies or even a 9VDC battery. Measures 3.1" x 1.4" x 0.6".

If you want a stand-alone unit, check out the MK164! Built in a sweet little enclosure with an IR viewing window, it has audio input, out, and power jacks to make external connection a breeze. Just plug the unit between the audio source and the amplifier or destination and you're all set! Includes the slick little housing shown. Measures 3.2" x 2.2" x 1.3". From Velleman.

MK163
IR Stereo Volume Control Board Kit
\$16.95
MK164
IR Stereo Volume Control, External Kit With Enclosure
\$18.95

IR Stereo Volume Control

- ✓ Control line level stereo audio!
- ✓ Range 0dB to -79dB in 62 steps!
- ✓ Mute, up, down, and auto fade-in


MK164

KIT

15 Channels, 3 Addresses... In A Single IR Receiver!

Use this 15 channel IR receiver with your K8049 transmitter and control multiple devices in several rooms! Provides 15 channels of control, with 3 possible separate addresses for use in multiple rooms. 4 operating modes provide 15 independent outputs, 15 rotary outputs, 7 independent outputs and 8 rotary outputs, and 7 rotary outputs and 8 rotary outputs independent from each other! Each output is an open collector rated at 50V/50mA. Runs on 8-14VDC, 10mA all outputs off, 150mA all outputs on. Comes complete with one LED IR sensor. Order up to two additional LED IR Sensors below for up to 3 separate receive locations. PC board measures 2.8" x 4.5" and has easy to connect terminals for all outputs. From Velleman.

K8050
IR 15 Channel Receiver Kit
\$32.95
IR38DM
LED IR Sensor
\$3.95

Temperature Sensor Module

- ✓ Measures -4° to +158° Fahrenheit!
- ✓ Highly accurate!
- ✓ Simple adjustment

Quick & Easy Temperature Sensor!

Looking for a general purpose, easy to interface temperature sensor for your projects? This is it! Whether you need to control heating and cooling of rooms or equipment, monitor temperatures in circuits, monitor your pool temperature, or simply put a temperature readout on your website, the K8067 fits the bill. With an accuracy of 2° over the full range! The small board makes integration into your project or equipment simple, and the sensor device can be board mounted or remotely located from the board. The temperature range is -20°C to +70°C (-4°F to +158°F). The output is a standard 0-20mA current loop for easy interfacing. Input voltage of 12VDC provides 0-5V output while an input voltage of 15VDC provides 0-10V output. Current consumption is 30mA max. Board measures 2.2" x 1.4" x 0.6". From Velleman.

K8067
Temperature Sensor Module Kit
\$19.95


New For 2007

KIT

The Easy Way To Display RPM!

Digital Tachometer

- ✓ 100 to 9900 RPM!
- ✓ Easy calibration!
- ✓ Includes front bezel

The small main board measures 3.2" x 2.4" and the display PCB measures 3.2" x 1.8". The matching red filter bezel measures 2.8" x 3.5". If you're looking for a super looking tachometer for your vehicle, the K2625 does the trick. From Velleman.

K2625
Digital Tachometer Kit
\$32.95

Laser Trip Sensor

KIT

**TOP
SELLER!**

Build It Tonight, Sleep Tight!

- ✓ Set up a security fence for over 500 yards of continuous coverage
- ✓ Includes both audible and visible alert indicators!
- ✓ 5 Amp external trigger relay for custom applications!
- ✓ Detector standby current draw of only 10 uA!!!

For years hobbyists have been intrigued by the possibility of using a 'beam of light' to control other devices! The abundance of inexpensive laser elements that have now become available has further pushed the demand for useful products and experimental kits. The LTS1 Laser Trip Sensor was developed with the intention of providing a fun and educational kit that can actually be used constructively upon completion. The kit comes with all you'll need to set up your own laser fence: the laser element (small key-chain type high power laser pointer!), the PVC enclosure, and the laser detector with built-in Audible and Visible Alert indicators. (And yes, you can put the laser pointer on your keychain instead, and get thrown out of concerts, no problem!)

The LTS1 can be used in a number of different ways. The break-away circuit board gives the user the flexibility of remotely mounting the detector circuit (optionally powered with a standard 9 Volt battery) over 500 yards away without the need for mirrors. If mirrors are used, arrangements in a doorway or as a perimeter fence can almost guarantee detection of any unwanted guests. For added functionality, the relay output (5 Amp rating) can be used to drive other devices such as an event counter, lights, or even camera modules! Operates from 9 - 18 VDC @ 90 to 100 mA. Detector portion can use a standard 9V battery with long life. Board dimensions: 4" L x 1" W (max component height: 5/8"). Includes a 6" length of 1/4" ID PVC to conveniently house and mount the board assembly. (Now all you need is a fog machine so you can see the laser beams just like those spy movies!)

LTS1
AC125 **Laser Trip Sensor Alarm Kit**
110VAC Power Adapter

\$29.95
\$9.95

Wireless Trip Sensor

KIT

Wired & Tested

Remotely Detect Motion!

- ✓ Our popular Laser Trip Sensor...**NOW WIRELESS!**
- ✓ Remote sensing up to 300' away
- ✓ Provides both audible and visible alarms

With the popularity of our Laser Trip Sensor we designed the Wireless Trip Sensor! We combined a very low power sensor along with a powerful UHF transmitter that can send from over 300 feet away. Each transmitter and receiver can be set for their individual code allowing you to protect various "zones" and telling you which zone was violated!

The source is generally placed near a continuous power source and the remote transmitter can be placed anywhere without running any wires. The transmitter is typically effective for up to 600 feet. The WTS1 will constantly look at the ambient light in the room or area you wish to protect and sense any blockage of the light. Once that happens it sends its wireless signal to the matching receiver to alert you! No definitive trip paths and no wires!

The sensor/transmitter mounts in a standard piece of 1 1/2" PVC pipe (included) for easy and inconspicuous mounting. Being battery powered, there are no wires or plugs attached. The receiver includes a visible LED alarm as well as a built in audible alarm. Once tripped, the alarm remains on until it is reset by the front panel reset switch. Transmitter and receiver work at 433MHz and are designed around our proven RF modules (Page xx). Receiver includes a built-in wire whip antenna and the attractive black custom case set shown. The transmitter operates on four AA batteries (not included) and the receiver runs on 9-15 Volts DC, or our AC125 power adapter (optional). Case size 5"W x 1 1/2"H x 5 1/4"D. Find out when someone goes into that room today, with the Wireless Trip Sensor.

WTS1C
AC125 **Wireless Trip Sensor Kit With Case**
110VAC Power Adapter
WTS1WT **Factory Assembled & Tested WTS1 With Case And Power Supply**

\$64.95
\$9.95
\$104.95

Microwave Motion Detector

**TOP
SELLER!**

KIT

Don't Cook... Detect Motion!

- ✓ Great introduction to microwave basics
- ✓ Ideal for home alarms

This unit sends out a microwave signal and looks for a return; a moving object will reflect back some microwave energy and the kit detects it. Since microwaves (no, you won't get cooked or burned by them!) are used - heat, light, sound or vibration will not affect the sensor.

This makes it ideal for car and home alarms, outdoor and garage light operators, animal in-your-garbage alarms, and tons more ideas limited only by your imagination. Kit includes detailed instructions, theory of operation, the custom case set shown, and lots of applications and look-ups. Runs on 9 to 15 VDC. Case size: 5"W x 1 1/2"H x 5 1/4"D.

MD3C **Microwave Motion Detector Kit**

\$34.95

Liquid Level Controller

KIT

Check The Water Level Remotely!

- ✓ LED level indicators!
- ✓ Relay switch output!
- ✓ Selectable alarm output!

If you have a reason to monitor the level of water or other liquids, the K2639 Liquid Level Controller is just the kit! Not just an alarm like its little Mini-Kit brother the MK108, it gives you an LED display of LOW, MIDDLE, or HIGH levels. You can also have it turn on a pump or switch open a valve with a 240VAC, 3A relay output. Plus, there is an alarm output that you can selectively set to sound under a HIGH or LOW condition.

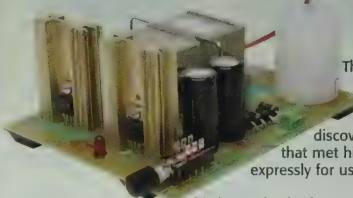
Runs on 12-14VAC or 16-18VDC. Relay output is rated 3A at 240VAC. Main controller board measures 4.1" x 2.4". Separate sensor board measures 4.1" x 1.0". If you're looking for a nice matching power supply, order our PWR25 below. Now there are no excuses a wet basement. From Velleman. (Well, actually there IS an excuse for a wet basement... I never put one of these down there and what a mess!)

2639
WR25 **Liquid Level Controller Kit**
12VAC Power Supply

\$19.95
\$9.95


KIT
**TOP
SELLER!**
**Shocking Results...
Literally!**

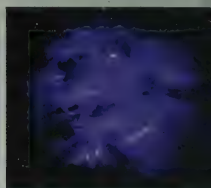
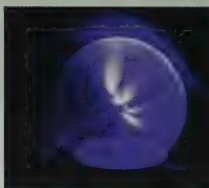
This new kit was conceived by one of our engineers that likes to play with things that can generate large, loud sparks, and other frightening devices. During the process of looking for parts for one of his latest experiments he discovered how difficult it was to find a high voltage transformer that met his requirements. Well, we had a super unit designed expressly for us!



This is one heck of a neat kit! It really serves no purpose other than producing stunning lighting displays, drawing big sparks, scaring the neighbors and performing lots of high voltage experiments. In the picture to the right we took a regular clear "Decora" style light bulb and connected it to the PG13. WOW! A storm of sparks, light tracers and plasma filled the bulb! Holding your hand on the bulb doesn't hurt a bit and you can control the discharge!

It can also be used for powering other experiments... let your imagination be your guide! The high voltage at the terminal won't electrocute you, so it's relatively safe, but it can burn you, so use caution. Can also be run from 5-24VDC so the output voltage can be directly adjusted by simply adjusting the input voltage! This is for advanced experimenters only and not for the faint of heart! (Unless you buy the ECG Kit on page 34, then it's OK!)

PG13 Plasma Generator Kit
PS21 16VAC Output Power Adapter

\$64.95
\$19.95

Air Blasting Ion Generator

- ✓ Generate negative ions along with a blast of fresh air, without any noise!
- ✓ Generates a steady state DC voltage at a constant current, not pulsed!
- ✓ Generates 7.5kV DC negative, 400uA. That's a lot of ions!

This nifty kit includes a pre-made high voltage ion generator potted for your protection, and probably the best one available for the price. It also includes a neat experiment called an "ion wind generator". This generator works great for pollution removal in small areas (Imagine after Grandpa gets done in the bathroom!) and moves the air through the filter simply by the force of ion repulsion!

No fan blades, no noise, just swiftly moving, charged air! Gee, have we heard of this technology on a boatload of air cleaner infomercials lately? It's amazing when you get this built, and actually feel the air flow and smell the very special clean ion smell without any moving parts! The first engineering prototype quickly went into the Ramsey employee restroom!

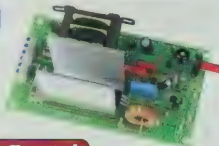
Learn how modern spacecraft use ions to accelerate through space and why ion engines are ideal for long-distance space travel. Includes ion power supply, 7 ion wind tubes, and mounting hardware for the ion wind generator. Runs on 12-15VDC at 500mA. (Caution...do not grab the output of the transformer, all the ions may be sucked out of your body! And don't you just hate it when that happens!)

IG7 Ion Generator Kit
AC125 110VAC Power Adapter

\$64.95
\$9.95
KIT
**Generate A Breath
Of Fresh Air!**

**TOP
SELLER!**
AC Motor Speed Controller

- ✓ Load 24-240VAC at 5.5 amps!
- ✓ Input voltage 110-240VAC!
- ✓ Speed range 5-95%
- ✓ Low RFI


Adjust Speed But Maintain Torque!

This controller was designed to control AC motors with carbon brushes, anything from drills to vacuum cleaners to saws. Unlike normal dimmers there is a phase-cut only once per period.

The moment of cutting determines the speed, which can be adjusted from 5-95%. Thanks to this control, this kit provides high torque even at low speeds! Not only for 110VAC and 220VAC motors, but can also be used for low voltage (24VAC) AC motor loads.

The supply and load circuits are electrically isolated from each other for both safety and reliability. Unlike a lot of AC controllers, RFI is suppressed to eliminate noise and interference. Measures 5.1" x 3.0". From Velleman.

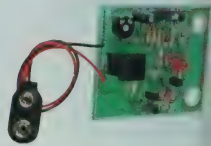
SPECIFICATIONS

Voltage Supply:	110-240VAC
Load Voltage:	24-240VAC, 5.5A maximum
Speed range:	5-95% of rated motor speed
Dimensions:	5.1" x 3.0"

K2636 AC Motor Speed Controller

KIT
\$29.95
Voltage Wire Detector

- ✓ Find wires up to 4" away!
- ✓ LED indicator shows wire proximity!
- ✓ Compact PC board
- ✓ Runs on a standard 9V battery


Find It Before The Nail Does!

How many times have you driven a nail or screw into a wire behind a wall? Well, I don't know about you, but I certainly have! Especially those long drywall screws that love to cut right through a chunk of romex cable! Been there, done that!

This detector kit will let you easily search for wires inside or behind walls, as well as track down interruptions. Simply hold the device around the area you wish to

SPECIFICATIONS

Indication:	Flashing LED, buzzer optional
Sensitivity:	Adjustable, up to 3.9"
Supply Voltage:	9V battery
Dimensions:	2.2" x 2.5"

check and the LED will begin to flash when it gets near a wire with supply voltage. The faster the flashing, the closer you are to the wire! If you would prefer an audible cue, the kit is built to work with an optional PC mounted buzzer as well. Board measures 2.2" x 2.5". From Velleman. (Yes, the wall was just finished, and it was a 220V line for a baseboard heater, and yes, had to open up the wall!)

K7101 Voltage Wire Detector Kit
SV4125 Optional PC Board Buzzer
G407 Recommended Case Set for K7107

KIT
\$8.95
\$4.95
\$7.95



200 kV Van de Graaff Generator

Wired & Tested

KIT

**Dazzle Them With Huge Sparks!
Make Their Hair Stand Up On End!**

- ✓ 200,000 volt potential!
- ✓ Sparks up to 5"!
- ✓ Operates in high humidity!
- ✓ Available kit or assembled & tested



VG200W
Discharge
Wand

VG200
VG200WT
VG200W

200 kV Van de Graaff Generator Kit
Factory Assembled & Tested VG200
Matching Discharge Wand, 1.3' Rod



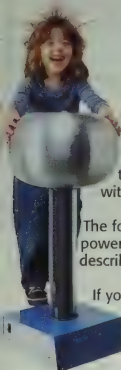
\$119.95
\$139.95
\$59.95

Create your own lightning with these time-tested devices that have delighted students for decades! Named after the inventor Van de Graaff, a physicist who built the first generator in 1929 at Princeton University. This machine produces low-amperage static electricity that can be "shocking" but perfectly safe. Two different pulleys with 2 neoprene belts inside a 1 3/4" plastic column create and carry a static charge up to the 7" polished aluminum collector globe. You can draw out this static charge in a burst of lightning, sparks, or you can even set each hair on your head on end! It's an incredible display! The entire unit is 18" tall, runs on 110VAC, and includes a ground clip for discharge wands. Our comprehensive instruction book tells you how to raise hair, produce lightning and electric wind, experiment with St. Elmo's fire or electrostatic attraction and repulsion. For a stunning display use the matching "discharge wand" with your VG200 and watch the sparks fly between the two globes!

If you're looking for a really neat experience and want to learn the basics at the same time, the Van deGraaff generator kit is for you. If you can't wait to build it and just want to have a ball with the sparks, we even offer it factory assembled and tested! Your choice! If 200 kV isn't enough zap for you, check out our VG400 below! (So we got these in, our techs set one up, and they called me to make my hair stand up on end...wait, my hair fell out when I was 22!)

Wired & Tested

**When 200,000 Volts...
Just Isn't Enough!**



What's the matter, our 200 kV Van deGraaff doesn't have enough "stooch" for you? You want even more of your hair to stand straight up? You want foot long sparks? Well, for you die-hard shock fans, here you go; how does 400 kV sound? Just like its little brother the VG200, it can create lightning and make hair literally stand up on end! The VG400 produces up to 400,000 volts with special neoprene belts inside a 3" diameter transparent butyrate column to carry the 10 microamp charge up to the whopping 13" polished aluminum globe! It proudly stands 35.5" tall with a very heavy metal base for rock stable operation.

The foolproof brush assembly never needs adjustment to guarantee flawless operation...and lots of sparks! The VG400 runs on 110VAC, and includes a power cord, on/off switch, and a grounding terminal for discharge wands. Just like the VG200 we include a comprehensive instruction book that nicely describes all the experiments and displays you can produce.

If you really want to put on a show use the heavy duty matching VG400W discharge wand and watch the action between them! Grounded to the VG400WT the sparks really fly! It's incredible and produces a fantastic display! The high power VG400 is available factory assembled and tested only to assure you perfect and safe operation. When you receive it, just plug it in and you'll have a hair-raising experience...we guarantee it! If you have a hankering to safely play around with 400,000 volts, then the high power Van deGraaff generator is for you.

VG400WT
VG400W

400 kV Van deGraaff Generator, Factory Assembled & Tested
Matching Discharge Wand, 2.6' Rod



VG400W
Discharge
Wand

\$439.95
\$69.95

DC Motor Speed Control

KIT

**Full Power...
Any Speed!**

- ✓ Real pulse width modulation for accurate, stable motor control
- ✓ Controls DC motors from 3 to 50 volts - up to 10 Amps!

Controlling a DC motor's speed is not as easy as just varying its supply voltage. The motor loses torque (power) as the voltage is lowered and it finally stops rotating. The MSC1 uses a technique known as "Pulse Width Modulation" - PWM - to control speed. This is the same system used on electric cranes, buses and subway cars. With PWM the motor receives full voltage whenever energized - however, the duration of the voltage changes; it's sort of like flipping an on/off switch very rapidly! The motor rotates smoothly and with full power - no matter what the speed.

The MSC1 will control DC motors from 3 to 50 volts at up to 10 amps! Complete instructions detail how the PWM circuitry operates and some hook-up ideas. Assembly takes only an hour or two. Kit operates on 9 to 12 VDC and controls motor supply of 3 to 50 volts. Includes our custom case set measuring 5"W x 1 1/2"H x 5 1/4"D. (To our friend that tried to use this to control 480V/100A industrial motors...sorry about the melted case!)

MSC1C

DC Motor Speed Control Kit With Case



\$34.95



KIT

**Finally...A Stepper For All
Those Surplus Motors!**

TOP
SELLER!

Stepper Motor Controller-Driver

- ✓ Controls direction, step size, and power to the motor
- ✓ Output drives 5 to 15 volts
- ✓ Uses Motorola Stepper Motor Driver IC Chip

Those are top quality, but how the heck do you drive them without shelling out a fortune? Easy, with the Ramsey Super-Stepper! Build an accurate positioner, X-Y controller, plotter or even a Robot! The Super-Stepper will drive almost any stepper from 5 to 15 volts. You'll be able to control direction, speed, step size (rotational increment), and even power-down the motor after rotating it. An on-board clock generator is provided for easy hook-up-and-go operation or you can externally drive the kit for more exotic control.

See complete details and ideas for additional uses. Put those versatile, first rate (and cheap!) motors to work with this exciting kit. Includes the matching black custom case set. Operates on 5 to 15 VDC. Case size 5"W x 1 1/2"H x 5 1/4"D.

MD1C
IC125

Stepper Motor Driver Kit With Case
110VAC Power Adapter

\$34.95
\$9.95



KIT

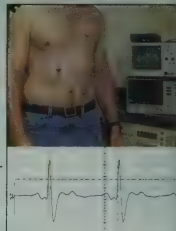
Wired & Tested

TOP
SELLER!

**Check Your Own
Heart & Stay
Healthy!**

Electrocardiogram ECG Heart Monitor

- ✓ Visible and audible display of your heart rhythm
- ✓ Re-usable sensors included; just like visiting the lab at the hospital!
- ✓ Bright LED "Beat" indicator for easy viewing
- ✓ Monitor output for professional display on your oscilloscope
- ✓ Simple and safe 9V battery operation



One of the main reasons we designed the ECG1 was to answer a long running debate here in the engineering department. We wired up the "Boss" and finally confirmed he does not have a heart! Use the ECG1 to astound your physician with your knowledge of ECG/EKG systems. Enjoy learning about the inner workings of the heart while at the same time covering the stage-by-stage electronic circuit theory used in the kit to monitor it. The three probe wire pick-ups allow for easy application and experimentation without the cumbersome harness normally associated with ECG monitors. The documentation with ECG1 covers everything from the circuit description of the kit to the circuit description of the heart! Multiple 'beat' indicators include a bright front panel LED that flashes with the actions of the heart, an adjustable level audio speaker output supporting mono or stereo hook-ups, and a monitor output to view the traditional style ECG/EKG waveforms you see on ER... or in the ER!

The fully adjustable gain control on the front panel allows the user to custom tune the differential signal picked up by the probes giving you a perfect reading every time! Includes the matching custom case set shown, and operates on a standard 9VDC battery (not included). This is NOT a medical device; it is intended for hobbyist usage only. If you experience any symptoms, seek medical help immediately! (Editors note: This kit is not intended for catalog editors and webmasters of Ramsey Electronics; it's just way too late for us!)

ECG1C
ECG1WT
ECGP10

Electrocardiogram Heart Monitor Kit With Case
Factory Assembled & Tested ECG1 With Case And Power Supply
Set of 10 Replacement Reusable Probe Patches

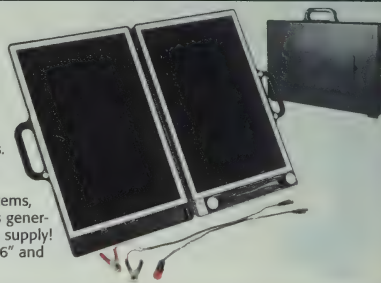
\$44.95
\$89.95
\$79.95

Solar Generator Briefcase

Wired & Tested

- ✓ Powerful 13W generators!
- ✓ 14VDC, 750mA
- ✓ Folding briefcase design

**Steal From
The Sun!**



So you're outdoors away from the nearest electrical outlet and you need power. What do you do? Until now you had to have a small gas powered generator. That gets a tad bit bulky, heavy, and with the fuel needed, dangerous. Those days are gone! Carry along your Solar Briefcase and capture the power from the sun... it's free!

This incredibly handy package of power is great to run laptops, small electric hand tools, DC refrigerators, GPS systems, portable electronics, and a whole lot more! It's also great to charge your batteries. The two powerful solar panels generate 13 watts of power. That's 14VDC at a working current of 750mA! That's more than the average plug-in power supply! Detachable connectors are provided for a variety of applications. The briefcase design measures 20.1" x 14.7" x 1.6" and weighs a scant 9.7 lbs.

SOL8 **Solar Generator Briefcase, Factory Assembled & Tested**

\$139.95



Wired & Tested

Keep Your Battery Charged!

TOP
SELLER!

Solar Vehicle Trickle Charger

- ✓ Works with any vehicle!
- ✓ Easy window or visor mounting!
- ✓ Easy connections

We've all been there; your car sat in a parking lot for a week or so, you came back and the battery was flatter than a pancake! It doesn't take much to drain a battery down if the vehicle is not run. Whether you know it or not, today's vehicles have electronics draining the battery 24/7 whether the car is on or off.

Now you can rest assured you will never have a dead battery! Just keep this handy solar trickle charger plugged into your accessory power jack (cigarette lighter plug for those of you that don't know the new name!) and you are all set. Built-in protection prevents current reversal. Provides 14.5VDC at 125mA. Comes complete with cigarette lighter plug, battery clamps, and window suction cup mounts. If your car sees the sun, your car's battery will never be dead! Measures 13.4" x 4.7" x 0.6", perfect for a sun visor.

SOL5N **Solar Vehicle Trickle Charger, Factory Assembled & Tested**

\$26.95

Multifunction Dimmer Kit

KIT

- ✓ Microcontroller technology!
- ✓ 13 different functions!
- ✓ Works with resistive & inductive loads!
- ✓ Soft start prolongs the life of bulbs!

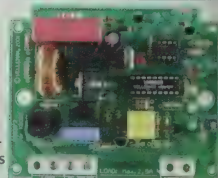
**The Ultimate Dimmer...
With EPROM Backup!**

SPECIFICATIONS

Operating voltage: 110-125VAC or 220-240VAC
Frequency: Automatic detection 50/60Hz
Maximum load: 2.5A (300W/120VAC)
Dimensions: 3.9" x 3.2" x 1.4"

Impulse switch, staircase light control, slow on/off dimmer, interval timer, and speed adjustment for fans are just some of the features you'll have at your fingertips when you build this dimmer kit!

Works with both resistive and inductive loads so you can control light bulbs, high-voltage halogen lighting, or low-voltage halogen lighting with a ferromagnetic transformer. Also includes soft-start technology to prolong the life of bulbs, fault protection, independent delay times, and EEPROM memory backup to save settings in case of power failure. 2 delay times (5 seconds to 2 hours) can be programmed through the learning mode. Board measures 3.9" x 3.2" x 1.4". From Velleman.



K8028 **Multifunction Dimmer Kit**

\$32.95



Mini-Kits...Fast, Easy, FUN!

Mini-Kits are handy, easy-to-build, easy-to-use, functional kits that can be used alone or as building blocks in larger, more complex designs.

Automatic VOX Voice Switch



- ✓ Use your voice or noise to control!
- ✓ Directly switches relays or low voltage loads up to 100mA!
- ✓ Endless applications!

Our most popular Mini-Kit, the VS1 Voice Activated Switch (VOX) will provide a switched output when it "hears" sound. Use it to key a transmitter for hands-free PTT, turn on a tape recorder automatically when people are talking in a room, turn on lights or anything else for that matter at the sound of your voice! How about having your garage lights turn on when you beep your horn? The possibilities are endless. The output drives up to a 100mA load such as a relay, tape recorder control line, transmitter PTT line, etc. Runs on 6-12VDC for easy integration into any equipment. Board measures $2\frac{1}{2}" \times 1\frac{1}{2}" \times 1\frac{1}{4}"$.

VS1 Automatic Voice Activated VOX Switch Kit

Automatic Voice Control!



TOP
SELLER!

\$9.95

Super Snoop Amplifier

- ✓ High sensitivity, long distance listening!
- ✓ Powerful 2W audio output!

Super High Gain!



Here's a super sensitive amplifier that will pick up a pin drop at 15 feet! It's an ideal general purpose amplifier, too. Full 2 watts audio output is great for boosting low power receivers and radios, and when wired for high gain, makes an excellent room monitor or "big ear" mic amp... easy to listen in on "wildlife" both in the field and in the city! Runs on 6-15VDC at 500mA. Drives any speaker. Measures $1\frac{1}{2}" \times 1\frac{1}{2}"$.

SN9 Super Snoop Amplifier Kit



\$9.95

LED Red Blinky

- ✓ Tweak a child's interest!
- ✓ Perfect 1st learning kit!
- ✓ Thousands and thousands sold!

Great Starter Kit!

TOP
SELLER!

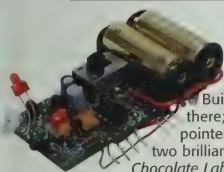


Alternately flashes two jumbo red LEDs; this is the kit you've seen on name badges, buttons, hats, and toys. But, there's more to it than that. Add a couple of relays and Christmas light strings and you've got yourself a super light chaser just like the heater marquee. Or add a zener diode and make an attention getting overvoltage warning light. Runs on 3-9 VDC, typically a 9V battery (not included). Used throughout the world as the first learning kit for students young and old. Measures "square".

BL1 LED Red Blinky Kit



\$7.95



THIS Bug Doesn't Eavesdrop...It Crawls!

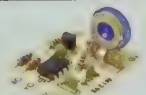
Built around a couple of subminiature vibrating cell phone motors, the bug wanders around looking for things to bump into! No problem there; sensors below his blinking eyes sense obstacles and make him turn away! Likewise, you can steer him around with flashlights or laser pointers! Travel direction and pattern are customized with separate speed and sensitivity controls. Runs on two "N" batteries (not included). Has two brilliant blinking red LEDs as "eyes". This is a fun kit that is guaranteed to keep you amused, at least until the batteries die or the dog kills it! (My Chocolate Lab would probably try to make friends with it!)

VEB1 Walking Electronic Bug Kit

\$29.95

Universal Timer

- ✓ Trigger or oscillator
- ✓ 555 timer IC design



IC Switching...\$10!

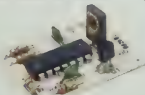
dd a time delay, keep something on for a preset time, provide timing or clock pulses, or provide an audio tone. The UT5 does it all using the famous 555 timer IC. Comes with detailed learning instructions for many applications. Runs on 5-15VDC and controls up to 100mA.



UT5 Universal Timer Kit \$9.95

Warble Alarm

- ✓ 15W of power!
- ✓ Real attention getter!



Our "Mad Blaster"

If you need to simply get attention, the "Mad Blaster" is the answer, producing a LOUD ear shattering raucous racket! Super for car and home alarms as well. Drives any speaker but a horn type provides the loudest sound. Runs on 9-12VDC. Measures $1\frac{1}{8}" \times 1\frac{1}{4}" \times \frac{1}{2}"$.



MB1 Warble Alarm Kit \$9.95

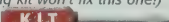
Dripping Faucet

- ✓ Repeated "Plink" sound!
- ✓ A pleasant alarm!



Drip, Drip, Drip!

Somewhere between a dripping faucet and electronic "chime" in a new car! Just like a drip into a bowl of water! Use it where a unique sound is needed. Learn how a simple oscillator works too! Drives any speaker. Runs on 4-9VDC. (That O-Ring kit won't fix this one!)



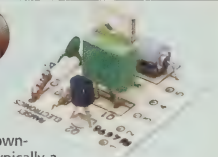
EDF1 Dripping Faucet Kit \$9.95

Electronic Siren

- ✓ Just like the police cars!
- ✓ 5W audio output!

Here Come The Cops!

TOP
SELLER!



The SM3 siren exactly duplicates the upward and downward wail of an electronic police siren. A closure (typically a push button) generates the upward wail, releasing the switch makes it return downward. Powerful 5 watt audio output drives any speaker, but a "horn" speaker provides the loudest results. Runs on 6-12 VDC, typically a small 9V battery. Great little kit to build into your projects or as a stand-alone fun generating siren!

SM3 Electronic Siren Kit

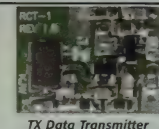
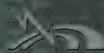


\$7.95



Walking Electronic Bug

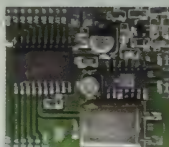
- ✓ Avoids obstacles!
- ✓ Turns in response to light!



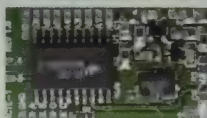
TX Data Transmitter



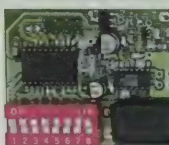
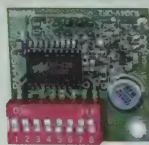
RX Data Receiver



RXD Receiver/Decoder



TXE Transmitter/Encoder

RXDA
Receiver/DecoderTXEA
Transmitter/Encoder

RXD433A	433 MHz Receiver/Decoder Module w/Dip Switch	\$39.95
TXE433A	433 MHz Transmitter/Encoder Module w/Dip Switch	\$37.95
RXD433	433 MHz Receiver/Decoder Module, Assembled	\$34.95
TXE433	433 MHz Transmitter/Encoder Module, Assembled	\$32.95
RX433	433 MHz Data Receiver Module, Assembled	\$29.95
TX433	433 MHz Data Transmitter Module, Assembled	\$24.95
RXD916	916 MHz Receiver/Decoder Module, Assembled	\$34.95
TXE916	916 MHz Transmitter/Encoder Module, Assembled	\$32.95
RX916	916 MHz Data Receiver Module, Assembled	\$29.95
TX916	916 MHz Data Transmitter Module, Assembled	\$24.95

Let These Modules Do All The Work In YOUR Next Project!

Wired & Tested

**TOP
SELLER!**

Now you can build those special remote control projects in a flash, and have the ultimate in reliability...and security! Unlike other units on the market, these units are crystal controlled for no frequency drift, yet are ultra small and very low power.

These wireless RF link boards are perfect for any wireless application- sending data, car alarms, door openers, home security, electronic monitoring... you name it. Monitor a test point or an alarm point on a circuit and have it alert you remotely; the applications are endless! Thousands of these have been provided to manufacturers for their OEM use! You may already have one of these and not know it!

Optional encoder/decoder models allow you to program each unit so that they only respond to your set code. Great for encoding sensors or controlling various functions wirelessly - no other processor or computing required! All modules are pre-assembled and tested so you can start your project today!

Two versions are available - 433 MHz and 916 MHz. 916 units can use shorter antennas (3 inches) and are better in high RF environments, while the 433 units have better range but need larger antennas (7 inches). The A-Series modules include a programmable dip switch for encoder/decoder settings, and common dual row pin-outs for easy integration into your equipment!

Because these are subminiature SMT designed circuits and boards, they are factory assembled and tested at Ramsey! Not a kit, and immediately ready to use, or implement with your project! (No, these do NOT send audio or video!!! There, saved you the email!)

RF Wireless Link Modules

- ✓ The EASY way to send and receive data!
- ✓ 433MHz and 916 MHz units available!
- ✓ Transmitters, receivers, encoders, decoders
- ✓ Factory assembled & tested SMT design

DTMF Touch Tone Decoder

- ✓ Decodes DTMF Touch Tones from telephones, radios, etc!
- ✓ 20mA output drives relays, LEDs, digital devices and more!
- ✓ Decodes 0 through 9, *, #, plus A, B, C, D

You can strap the TT7 for detection of any single digit, including the secondary A,B,C,D digits. When the decoder detects the selected digit it will provide a closure to ground for driving a relay, lamp, sounder, or other load of up to 20 mA. A commercial central office quality decoder IC chip is used, making the TT7 extremely reliable, fast, and sensitive. You may connect the TT7 directly across the speaker or detector output on any receiver, and in fact, we even detail how it may be connected directly to a telephone line. If your needs are single function remote tone control, the TT7 is for you. (For digital display of dialed touch-tone numbers, use our TG2 Tone Grabber on page 26, for remote control use our DCI series, also on page xx). Runs on 5VDC. PC board measures 1 1/2" x 7/8" x 2 1/4".

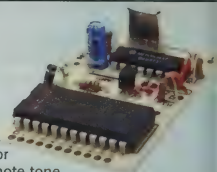
TT7 DTMF Touch Tone Decoder Kit

\$24.95

**TOP
SELLER!**

KIT

Your Phone Is Your Encoder!



KIT

Encode and Decode With The Same Kit!

The TD1 was engineered to provide all your tone control needs on a single PC board! The unique design will simultaneously encode and/or decode any audio frequency between 40Hz and 5000Hz. If you want to go even lower we provide the documentation to change one capacitor to go down to 10Hz! This little board is great for 2-way radio "PL" tones, remote controls, tone burst FSK or anywhere tones are involved. Frequency is easily set with the precision 20 turn trimpot, and the circuit uses a voltage regulator and Mylar cap for the ultimate in stability. The decoder output will drive any load up to 100mA making it simple to connect to your equipment. Runs on 5-12 VDC, will drive up to 100 mA load. Encoder output provides approximately 1V P/P output to easily drive your application. PC board measures 1 1/4" x 1/2" x 1 1/2".

TD1 Tone Encoder/Decoder Kit

\$9.95

Cable Polarity Checker

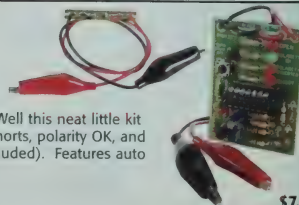
- ✓ Checks continuity & polarity!
- ✓ Auto power off!
- ✓ Pushbutton operation!

Which Way Should It Go?

We've all been there. You're running speaker wires through your house and you don't know which wire is which for polarity. Well this neat little kit takes care of it! Simply hook up the remote board to one end and the main board to the other end. LEDs show you opens, shorts, polarity OK, and polarity reversed! It's that simple! A lot of uses besides speaker cables, think about it! Runs on a standard 9V battery (not included). Features auto power-off for long battery life. Main board measures 2.2" x 1.6" while the remote board measures 1.6" x .3". From Velleman.

MK132 Cable Polarity Checker Kit

\$7.95





Touch Switch

- ✓ Touch on, touch off, or momentary!
- ✓ Two circuits on one board
- ✓ Great CW Keyer

2 Separate Circuits!



The ultimate touch switch! Touch once - it's on, touch again - it's off, or use the momentary outputs that stay on only as long as touched. Uses low power CMOS circuitry and functions on the principle of hum and noise pick-up when input is touched. There are two completely independent touch switch circuits on each board. It's like getting two for the price of one! Will drive loads up to 100 mA such as a relay, bell, siren, etc. Includes project info for use as a CW keyer. Runs on 6-12VDC.

TS1 Touch Switch Kit **KIT** \$9.95

Light Actuated Switch

- ✓ On-board SPDT relay!
- ✓ On at dusk, off at dawn
- ✓ Adjustable sensitivity

Fully Automatic!



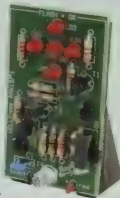
Tired of turning your lights on and off? Tired of paying the ever increasing cost of electricity because you forgot to turn them off in the morning? Consider it solved! The MK125 is a simple little kit that automatically senses light and automatically closes the on-board SPDT relay. Light sensitivity is adjustable over a wide range, and a delay circuit prevents recycling. Relay contacts rated at 5A. Runs on 12VDC. Board measures 2.6" x 2". From Velleman.

MK125 Light Actuated Switch Kit \$7.95
AC125 110VAC Power Adapter \$9.95

IR Remote Control Checker

- ✓ Just point and check!
- ✓ Confirms IR signal generation!
- ✓ Provides peace of mind!
- ✓ Runs on a standard 9V battery!

Check It Before You Wreck It!



We've all been there, sitting on the couch or easy chair, and the TV doesn't seem to respond to your remote control. Well, at first, you smack it, then hold it in the air and aim it closer to the TV, but the channel still won't change! At that point there's three options: get up and change the channel (ha, that will never happen); change the batteries and see if that works; or take another Xanax! Well, before all that, give yourself a treat, and check the remote with this handy IR tester. Simply point your IR remote at the board, press a function button, and the 4 LEDs confirm proper IR receive. Runs on a standard 9V battery (not included). Measures 2.2" x 1.2" x 1.3". From Velleman. (I guess I forgot about option #4, throw the remote at the wall!)

MK137 IR Remote Control Checker Kit **KIT** \$6.95

Water Sensor Alarm

- ✓ Sounds alarm when water is present!
- ✓ Can be remotely located!
- ✓ Includes buzzer alarm
- ✓ Runs on a 9V battery

Find Out BEFORE You're Flooded!



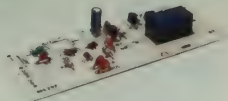
So the sump pump quits and because you don't live in your basement you're never the wiser. The result? A flooded basement and a lot of damaged things that are in the basement! And once that happens things never seem to be the same.

Now build a cute little water sensor alarm to let you know! Simply mount the alarm in the area you want to sense water and the moment it touches the contacts included alarm will sound. No wires, no external alarm system, nothing but this little board just waiting to alert you! The sensor can be remotely located by cutting that section of the board if desired. Runs on 9V battery (not included). Size: .8" x 2.8". From Velleman.

IK108 Water Sensor Alarm Kit **KIT** \$7.95

RF Actuated Relay

- ✓ Automatically senses presence!
- ✓ On-board DPDT relay
- ✓ Protects against RF input damage



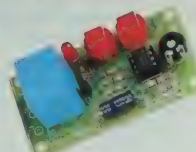
Senses RF BEFORE The Damage!

This is just the unit you need when adding a preamp or power amp in line with an existing antenna. It senses the RF power and closes an on-board DPDT relay which can be used to automatically switch in your added power amp or preamp. The relay is good up to UHF at 100W! Besides radios, many folks use one of these "lifesavers" in front of their expensive test equipment to prevent RF input damage! Runs on 10-15VDC and senses power as low as 50 mW. Size: 1 1/2" x 1 1/2" x 4".

RFS1 RF Actuated Relay Kit **KIT** \$19.95

Universal Start/Stop Timer

- ✓ Delay up to 60 minutes!
- ✓ On-board relay
- ✓ Runs on 12VDC



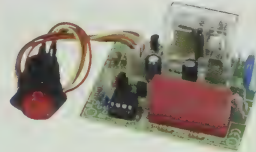
Start & Stop With Delay!

The K2579 is a miniature timer for any application that requires a start and stop function with a delay. Board mounted switches are provided for both start and stop. Time interval is variable and adjustable from 0 to 15 minutes, and extendable to 60 minutes with a modification. LED status indicator is provided. Relay is rated at 2A/240VAC max. Runs on 12VDC. Board measures 1.5" x 2.7". From Velleman.

K2579 Start/Stop Timer Kit \$12.95
AC125 110VAC Power Adapter \$9.95

Power Saver & Timer

- ✓ Single button operation!
- ✓ 1H, 2H, 4H, 8H, 24H options!
- ✓ On-board LED indicator!
- ✓ 10 amp relay output!



Set It, And Forget It!

This little timer kit can be easily added to any existing project to allow for automatic shutoff. Tons of applications; heating, cooling, lighting, entertainment systems, fans, pumps, sprinklers, cryogenic stasis tubes... well maybe not that last one!

Just set the jumper for short or long timers, use the push button to select your desired timer and the LED indicator will blink faster for the shorter timer, slower for the longer timer. It's that easy! 10A suppressed relay output, 100-240VAC power supply. Board measures 2.6" x 2" x 1". From Velleman. (Ramsey Electronics is not responsible for family members or pets lost due to cryogenic stasis failure!)

K8075 Power Saver & Timer Kit **KIT** \$24.95

Assorted LED Package

- ✓ Red, green, and yellow LEDs!
- ✓ 80 to choose from!
- ✓ 3mm and 5mm sizes

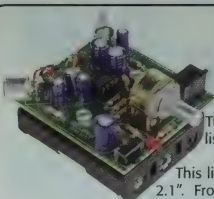


Brighten Up Your Day!

If you have found a package with seventy-nine assorted LEDs but those were not enough, and you found a package with eighty-one and that was too many... have we got a package for you!

Don't be missing that LED needed for your project any more, and no more trips to the corner electronics store that isn't there anymore! Contains the following LEDs:
15 x: 3mm green, 4.0mcd
20 x: 3mm red, 1.0mcd
5 x: 5mm green, 6.0mcd
20 x: 5mm red, 2.0mcd
10 x: 5mm yellow, 3.9mcd
Nicely packed in a handy blister pack to keep them stored. From Velleman.

KLED1 80 Piece LED Assortment \$8.95



**What Did He Say?
You'll Find Out!**

The "Stereo Ear" is an ultra high gain stereo audio amplifier! And when we say high gain, we mean it! It boosts audio 50 times and you can listen to it in stereo besides! Miniature high sensitivity microphones are placed at 45 degree angles to give you maximum separation.

This little kit also includes an on/off switch, volume control and audio output connector. Runs on 3 AAA batteries (not included). Measures 2.4" x 2.1". From Velleman. *Noisy tenants? Plug this into your PC audio in and record it all night, burn a CD, give it to your landlord... it works!*

MK136

Stereo Ear Super Stereo Amplifier Kit

\$9.95

Electronic Decision Maker

- ✓ No more coin flipping!
- ✓ Ideal for the indecisive!
- ✓ One button operation!
- ✓ Runs on a standard 9V battery!

Make Up Your Mind Already!

When a decision is simply too important to rationally analyze, let this handy gadget make the tough calls for you with a simple push of a button! One push and the green "Yes" and red "No" LEDs begin to flash. Flashing speed gradually decreases and only one LED remains lit. What will it be? Yes or No? Push the button and find out! Also features auto power-off to conserve battery life, which, by the way, is a standard 9V battery (not included). Measures 2.2" x 1.2" x 1.4". From Velleman. *(I wonder if these should be on the GSA contract!)*



MK135 Electronic Decision Maker Kit

KIT

\$6.95

Mini Electret Condenser Microphone

- ✓ Extremely sensitive!
- ✓ Built-in FET preamplifier!
- ✓ Super small size, great fidelity!
- ✓ Runs on 3 to 15 VDC

You CAN Hear Me Now!

This little subminiature condenser microphone element kit is great as a replacement microphone in tape recorders, walkie-talkies, radios, CB microphones, telephones, and other audio products. Extremely sensitive element has a built-in high gain FET preamplifier. A lot of customers use these microphone elements together with our BN9 Super Snoop Amplifier (see page 35) to build super sensitive "electronic ears".

The preamp is powered from 3 to 15 VDC on the audio line to the microphone. The kit includes a coupling capacitor and current limiting resistor to make the connection to your circuit a breeze!

Comes complete with detailed connection details, schematic, and diagrams. The microphone element measures 3/8" diameter x 3/8" high! And THAT is small!



MC1 Mini Electret Condenser Mic

KIT

\$3.95

Multifunction Relay Switch

- ✓ 14 different functions!
- ✓ 2 pre-programmed delays!
- ✓ Pushbutton control!
- ✓ EEPROM storage!

Build Your Own Switches!

This versatile relay switch is packed with features and can be used for a variety of control applications, including incandescent lighting, halogen lighting, fluorescent lighting, fans, valves, buzzers, etc! Timers, switching, flashing, interval, random switching, and more! Other features include learning mode for delays anywhere from 2s to 12 days, EEPROM for delay time storage in case of power failure, and on-board transient filter for the relay contacts! From Velleman.

SPECIFICATIONS

Operating voltage:	9-12VAC or 12VDC
Max load:	2.5A (275W at 110VAC)
Dimensions:	3.4" x 1.5" x 1.0"

K8015 Multifunction Relay Switch Kit
G410 Recommended Enclosure

KIT

\$19.95

\$7.95

Stereo Ear Super Stereo Amplifier

- ✓ Super high gain, amplifies sound 50X!
- ✓ Listen in stereo directly with headphones!
- ✓ Dual directional stereo microphones included!

**TOP
SELLER!**

Steam Engine & Whistle

- ✓ Vintage steam engine on a PC board!
- ✓ Adjustable "speed" and volume!
- ✓ Push button steam whistle!
- ✓ Runs on a standard 9V battery!

Locomotive Breath!

This cute little project authentically simulates the sound of a vintage steam engine locomotive and whistle! The unique design also provides variable "engine speed" as well as volume. And at the touch of a button, the steam whistle blows! Includes a small 8 ohm speaker so all aboard when you're done building the kit! Great for model railroads, sound effects for radio and stage, or just plain fooling around! Runs on a standard 9V battery (not included). Measures 3.9" x 3.3". From Velleman. *(Could have used this with my old original Lionel set that was given away and is now worth a fortune!)*



MK134 Steam Engine & Whistle Kit

KIT

\$10.95

Electronic Kitchen Timer

- ✓ 1 minute to 1 hour timing!
- ✓ Simple one button operation!
- ✓ Audible and visual alarm!
- ✓ Discrete pre-alarm!

For The Cookies We DO Like!

What good is the built-in timer on your stove if you're not there in the kitchen? It isn't, and the cookies will be burnt! Exactly!

This modern kitchen timer will not only save the cookies but will be a fun project to build and use. Times anywhere from 1 minute to 1 hour. Single button makes it a breeze to use with the following settings: 1 to 10 minutes in one minute steps; 10 to 30 minutes in five minute steps; 30 to 60 minutes in 15 minute steps. Accuracy is better than ±5%. Measuring a mere 3" x 1.3" this little timer can go in your pocket outside with you while the cookies are in the oven!

Even includes a pre-alarm to get you back inside in time! Runs on 3 AAA batteries (not included). From Velleman. *(Sorry, does not include the recipe of Ma Leo's famous chocolate chip cookies...that's a secret!)*



MK128 Electronic Kitchen Timer Kit

KIT

\$16.95

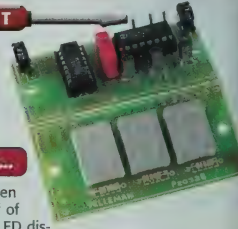
Digital Panel Meters

- ✓ Replace those analog meters!
- ✓ High impedance input
- ✓ Overload indicators
- ✓ High precision and stability
- ✓ Easy to read 7 segment displays

Replace Those Old Analog Meters...

This is the perfect little kit to replace old or broken analog meters in your equipment... and the end of their inherent problems! Three seven segment LED displays and a universal interface make the replacement a breeze.

A standard 5VDC supply voltage is used at 250mA. Displays +999mV and -99mV full scale complete with both positive and negative overload indicators. Resolution is 1mV with an input impedance of 100M ohms. The small size makes it simple to install in your existing equipment. Board measures 1.3" x 2.6". From Velleman.



K2032 Digital Panel Meter Kit

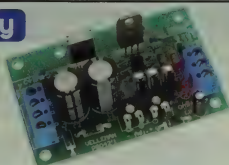
\$36.95



Symmetric 1A Power Supply

- ✓ Plus & minus 1.2V to 24VDC!
- ✓ Thermal protection
- ✓ Just add a transformer & heatsink

Low Cost, Easy to Build!



The K8042 is a great little symmetric power supply designed to provide ± 1.2 to 24VDC regulated at 1A. Perfect for amplifiers, op-amps, and other applications requiring a nicely regulated \pm DC source. The circuit provides short circuit and thermal protection.

Just provide a suitable power transformer or AC source (up to 24V) and heatsink and you're all set. Features LED status indicators. Board measures 3.1" x 2" x .9" From Velleman.

K8042 Symmetric 1A PS Kit **KIT** **\$13.95**

RF Preampifier

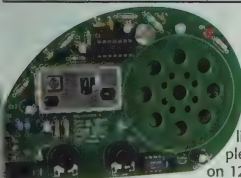
- ✓ Broadband from 100 KHz to 1000 MHz!
- ✓ High Gain: 16 db
- ✓ Low noise, less than 4dB!

We're Talking Broadband!



This is the famous preamp that's been written up in all the radio and electronics magazines. Very low-cost microwave transistors make it possible to give performance unheard of a few years ago! Provides 16dB gain from 100kHz to 1GHz and is unconditionally stable! Runs on 12-15VDC at 15mA. Input and output impedance is 50-75 ohm. Measures 1" x 3/8" x 1 1/2".

SA7 RF Preamp Kit **KIT** **\$19.95**



**Build It...
Then Listen To It!**

The greatest part of building a kit is the enjoyment afterwards seeing and hearing the results of your work! Now you can build yourself a little FM radio receiver, learn about FM receivers, and have a neat little radio in the end! The RF front end is preassembled to make it simple. Receives the whole FM broadcast band of 88-108 MHz. Includes an on/off switch, volume control, speaker, and LED indicator. Runs on 12VDC. Measures 4.8" x 3.3". From Velleman.

MK118 Portable FM Radio Kit
AC125 110VAC Power Supply

\$19.95
\$9.95

LED Switcher Blinky

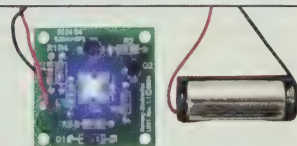
- ✓ Run a 3V LED with 1.5V!
- ✓ Learn about switching supplies!
- ✓ Super bright Blue LED!

**See... It IS Possible...
And Learn How!**

More than 30 years ago we came out with our ever famous BL1 Blinky kit. Thousands and thousands were built teaching people exactly how LEDs and transistor circuits work. Now we're going one step further! The LSW1 will show you how to light a 3V LED with a single 1.5V battery! The circuit is actually a very unique "switching power supply" which steps up the 1.5V battery voltage to around 5VDC! If you're new to switching power supplies this is the perfect little kit to get your feet wet!

If you're a serious hobbyist and want to see the neatest little circuit then you're in for a treat too! When you're all done you end up with a super bright Blue Telux™ LED running on 1.5V! But it doesn't blink you say? Sure it does... just at 140kHz! Requires a single AA battery (not included). Board measures 1.5" x 1.5".

LSW1 LED Switcher Blinky Kit **\$14.95**



Handy LED Tester

Wired & Tested

- ✓ Compact hand-held tester!
- ✓ Normal test range 2-30mA!
- ✓ Hi current test range 20-150mA!

Check It Before You Solder It!



This handy LED tester will work with the most common types of LEDs including normal, bi-color, and superflux (spider) LEDs. Runs on one 9V battery (included) and fits in the palm of your hand. Factory assembled & tested, ready to go! From Velleman. (For a fun time get one of these and our 80 LED packages on page 37 and test them all!)

VTTESTL Handy LED Tester, Factory Assembled & Tested **\$12.95**

Regulated 1A Power Supply

- ✓ 1.5 to 35VDC at one amp!
- ✓ LM317 regulator circuit
- ✓ Current and thermal overload protection

1 Amp Up To 35 Volts!



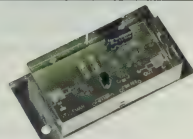
If you're looking for a small power supply regulator and don't want to build it up from scratch, the K1823 is just for you! Designed around the LM317 regulator, it will provide a variable regulated output between 1.5 and 35VDC. Continuous output current is conservatively rated at 1A with a maximum output current of 1.5A. Maximum input voltage is 40VDC for rated output. Both current and thermal overload protection is provided by the LM317. Heatsink is not included and is required for maximum rated output. Board measures 2.1" x 2.1". From Velleman.

K1823 1A Power Supply Board Kit **KIT** **\$12.95**

AM/FM RF Preampifier

- ✓ 10MHz to 150MHz!
- ✓ Shielded metal housing
- ✓ Direct or line fed DC supply

Amplify Those Signals!



Designed specifically for AM/FM radio reception, the K2622 provides 22dB gain between 10MHz and 150MHz. The sleek metal housing provides the necessary shielding and assures you of the least amount of interference. Input power is 12-15VDC at 2mA and can be powered directly or up the coax. Input/output impedance is 50-75 ohm. Measures 3.4" x 1.4" x .9". From Velleman.

K2622 AM/FM Preamp Kit **KIT** **\$13.95**

Portable FM Radio Kit

- ✓ Preassembled front end!
- ✓ No coils to wind!
- ✓ Includes everything!

KIT

\$19.95
\$9.95

Dual Super Bright LED Display

- ✓ 2 super bright red LEDs!
- ✓ Auto-on at dark!
- ✓ Adjustable sensitivity!

Grab Their Attention Automatically At Night!



This little kit alternately flashes two super bright red LEDs that are extremely attention "getting"! But it goes beyond that. If desired, a built-in light sensor automatically turns it on at night, and off at dawn. Light sensor is adjustable. Runs on a standard 9V battery or external 9-15VDC power. Measures 2.2" x 1.3" x 1.6". From Velleman.

MK148 Dual Super Bright LED Kit **KIT** **\$7.95**

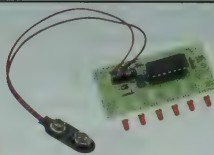


Mini LED Light Chaser

- ✓ 6 bright red LEDs!
- ✓ Sequentially flash in order!
- ✓ Great attention grabber!
- ✓ Runs on standard 9V battery!

Just Like Those Classic Turn Signals!

The K8032 on page 17 gave us a high level output to sequentially flash incandescent lights, but what if you just want a small attention getter to do the same with LEDs? We've got you covered. Remember the sequentially turn signals on the classic T-Birds and Cougars? Hey, if you can remember KITT on page 17 you can also remember these! This little kit flashes 6 high intensity 3mm red LEDs sequentially in order. Great small attention getter for signs in stores, exhibitions, model R/C cars, and a whole lot more. Get flashing with the MK173 (*Eww, I'm old, I had one!*)



MK173 Mini LED Light Chaser Kit

KIT

\$10.95

Electronic Brain Game

- ✓ Hours of fun with just 4 buttons!
- ✓ 4 difficulty levels!
- ✓ Audio or silent LED operation!
- ✓ Microprocessor controlled!

You Will Spend Hours!

The game is simple... repeat a pattern that is randomly generated by the built-in microprocessor. Sounds simple? You'll be amazed! At power-up you choose from one of 4 difficulty levels. The pattern is displayed by the 4 LEDs or by the built-in audible alert, or both. The reply speed of the game gradually increases during the game to make it even more challenging! The sleek ergonomic design is easy to hold and the 4 oversized push buttons make it easy and fun to use. You'll find yourself addicted to this little game. Runs on 3 standard AA batteries (not included). Measures 3.3" x 2.6" x 1.6". From Velleman. (*The fun is in the challenge!*)



MK159 Electronic Brain Game Kit

KIT

\$19.95

Popular Battery Holders

- ✓ Easy battery connections for your project!
- ✓ Sturdy mounting case!
- ✓ Solder, Snap, or Wire Connections
- ✓ Available for popular combinations of AA, AAA, C, D, & 9V batteries!

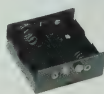
Make It Easy On Yourself!

Save yourself some time and hassle by cleanly integrating battery power into your projects with these sturdy plastic battery enclosures! Each battery holder is easy to mount and includes clearly marked polarity on solder tab, snap, or wire lead connectors for connection to your project. Available in combinations for standard AA, AAA, C, D, and 9V batteries. From Velleman. (*Yes you guessed it... batteries not included!*)

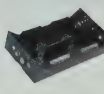
BH111D	Battery Holder, 1 x D Cell, Solder Tabs
BH121B	Battery Holder, 2 x D Cell, Snap Tabs
BH142B	Battery Holder, 4 x D Cell, Snap Tabs
BH211D	Battery Holder, 1 x C Cell, Solder Tabs
BH221B	Battery Holder, 2 x C Cell, Snap Tabs
BH243B	Battery Holder, 4 x C Cell, Snap Tabs
BH311D	Battery Holder, 1 x AA Cell, Solder Tabs
BH341B	Battery Holder, 4 x AA Cell, Snap Tabs
BH411D	Battery Holder, 1 x AAA Cell, Solder Tabs
BH443D	Battery Holder, 4 x AAA Cell, Snap Tabs
BH9V	Battery Holder, 1 x 9V Battery, Wire Leads



BH111D



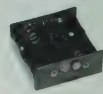
BH121B



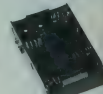
BH142B



BH211D



BH221B



BH243B



BH311D



BH341B



BH411D



BH443D



BH9V

\$0.95
\$1.45
\$1.95
\$0.95
\$1.45
\$1.95
\$0.95
\$0.95
\$0.95
\$0.95
\$0.95

100 Piece Fuse Assortment

- ✓ Fast acting to protect your equipment!
- ✓ .10A to 5A!
- ✓ Includes handy storage case

Oh No...The Fuse Blew!

This handy kit of fuses includes 10 fuses each of popular 5x20mm fast acting glass fuses. Fuse values are 0.1A, 0.2A, 0.5A, 1A, 2A, 2.5A, 3A, 4A, and 5A. 250VAC rating. Next time your fuse blows, don't grit your teeth, just get one out from this handy kit and replace it! From Velleman.



KFF 100 Piece 5 x 20mm Fuse Assortment

\$9.95

Crawling Light Sensing Microbug

- ✓ Hungry for light!
- ✓ Adjustable sensitivity and speed!
- ✓ LED eyes indicate travel direction!
- ✓ Runs on two standard AAA batteries!

Give Me Light, Give Me Light!

This bug isn't looking for food or water, and it's not hanging around your burger at the picnic table, but IS in constant search for light! Two open chassis sub-miniature motors drive this cute little guy in any direction it sees light. Adjustable light sensitivity sensors on the front search out the direction of the light source. Adjustable speed controls the motors to the speed you like. In addition, LED "eyes" blink indicating the direction it's traveling! What happens when it sees total darkness? It stops...of course! I guess it's scared of the dark! Runs on 2 standard AAA batteries (not included). Measures 5.2" x 3.5" x 2". From Velleman.



MK165 Crawling Light Sensing Bug Kit

KIT

\$22.95

Jumbo Single Digit Clock

- ✓ One giant red 7-segment display!
- ✓ Time is displayed as a sequence of digits!
- ✓ The ultimate gadget!
- ✓ Includes the enclosure!

The Most Unique Clock You'll Find!

Now THIS is the ultimate gadget digital clock for the electronic enthusiast! It's just one single digit... but at least its big! A huge bright red 57mm 7-segment display displays complete 12-hour time format in a sequence of digits... one digit at a time! The display is mounted in the hi-tech attractive dark enclosure that features a single button to control all features. Also includes a "blank display" dark mode. Built-in clock accuracy is 30ppm. Runs on 9-12VDC at 150mA. Finished case measures 2.9" x 2.3" x 1.3". From Velleman. (*Only you will know it's the time!*)



MK153 Jumbo Single Digit Clock Kit

KIT

\$21.95

Lighted Vehicle Fuse Kit

- ✓ Built in light illuminates when blown!
- ✓ Plug-in AST type fuse
- ✓ 10 assorted fuses

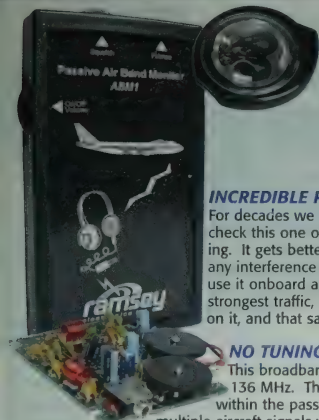
Find The One That Blew...In A Breeze!

This extremely handy 10-piece set of mini car fuses features a light bulb on each fuse which lights up if it blows out, allowing easy tracking and replacement! Includes 2 x 7.5A, 2 x 10A, 2 x 15A, 2 x 20A, 1 x 25A and 1 x 30A AST type fuses. Max 32V. From Velleman.



BLAFUML 10 Piece Lighted Vehicle Fuse Kit

\$3.95



KIT

Wired & Tested

**Monitors The Entire Band For Activity...
Without Any Tuning!**

TOP
SELLER!

INCREDIBLE PATENTED DESIGN!

For decades we have been known for our novel and creative product designs. Well, check this one out! An aircraft receiver that receives all nearby traffic without any tuning. It gets better... there is no local oscillator so it doesn't produce, and can't produce, any interference associated with all other receivers with an LO. That means you can use it onboard aircraft as a passive device! And what will you hear? The closest and strongest traffic, i.e. the plane you're sitting in! How unique is this? We have a patent on it, and that says it all!

NO TUNING, MONITORS THE ENTIRE BAND!

This broadband radio monitors transmissions over the entire aircraft band of 118-136 MHz. The way it works is simple. Strongest man wins! The strongest signal within the pass band of the radio will be heard. And unlike the FM capture effect, multiple aircraft signals will be heard simultaneously with the strongest one the loudest! And that means the aircraft closest to you, and the towers closest to you! All without any tuning or looking up frequencies! So, where would this come in handy?

1. At an air show! Just imagine sitting there listening to all the traffic as it happens, even the unknown frequencies!
2. Onboard aircraft to listen to that aircraft and associated control towers
3. Private pilots to monitor ATIS and other field traffic during preflight activities (saves Hobbs time!)
4. Commercial pilots to monitor ATIS and other field traffic as needed at their convenience
5. General aircraft monitoring enthusiasts

NO LOCAL OSCILLATOR, NO INTERFERENCE!

Wait, you can't use a radio receiver onboard aircraft because they contain a local oscillator that could generate interfering signals. We have you covered on that one. The ABM1 has no local oscillator, it doesn't, can't, and won't generate any RF whatsoever! That's why our patent abstract is titled "Aircraft band radio receiver which does not radiate interfering signals." It doesn't get any plainer than that!

THE HIT AT THE AIR SHOW!

What about an air show? The ABM1 is the perfect solution to communications monitoring! A lot of unknown frequencies are used between the ground and each plane flying. Listen to air-to-air, the air boss, PA talkthrough and the stunt planes with ease! With a normal receiver you need to know the frequency and tune into it. The ABM1 simply hears the activity as it occurs, perfect for an air show... should be standard equipment for all the spectators!

THE PILOT'S DREAM COME TRUE!

Then there are the private and commercial pilots! A lot of private pilots rent aircraft. With an ABM1 they can listen to field traffic and ATIS broadcasts before firing up the aircraft avionics; this saves on Hobbs time (inactive rental time!) and is convenient! Same with commercial pilots. Your access to ATIS and other broadcasts can be as close as your flight bag, briefcase, or pocket!

SIMPLE TO USE!

The receiver is in a compact case complete with a belt clip. Just plug your favorite pair of headphones or the provided set of ear buds into the receiver, turn it on, and you are now monitoring all local aircraft! A squelch control is even provided to mute background noise and interference! The receiver runs on a standard 9VDC battery (not included). You will hear all nearby aircraft, ground transmissions, local control towers, and any other traffic within the frequency range! Here in Rochester while I'm writing this catalog page I'm hearing local aircraft overhead calling Rochester Approach and Cleveland Center, and just heard the local News Chopper!

EVERYTHING INCLUDED, AVAILABLE AS A KIT OR READY TO GO!

Even with its compact design, we designed the ABM1 for easy construction by the electronic hobbyist. Thru-hole parts are used for all customer assembly. Several SMT components are part of the circuit, and they are pre-installed at the factory! Where's the antenna you ask? The headphone wire is your antenna! We even discuss a couple of component changes you can make to optimize performance with other than normal lengths of headphone wires. A professional set of stereo ear buds is included with the ABM1 to get you listening quick! You can also use your favorite set of Walkman type headphones with the ABM1. A factory assembled and tested SMT version with additional shielding for adjacent channel overloading is also available for the aircraft professional that just wants to get listening quickly.

If you're a private pilot, commercial pilot, airport worker, aircraft enthusiast, attend air shows, or spend a lot of time in airports or onboard aircraft, the ABM1 is for you.

Passive Air Band Monitor Receiver

- ✓ Monitors the entire aircraft band without tuning!
- ✓ Passive design, can be used onboard aircraft, no local oscillator, generates and creates no interference whatsoever!
- ✓ Great for air shows!
- ✓ Patented circuit and design!

SPECIFICATIONS

Frequency Range:	118 MHz to 136 MHz
Receiver Type:	Patented Passive Detector
IF Frequencies:	None!
Receiver Sensitivity:	Less than 2 uV for detectable audio
Audio Output:	700mW, 8-24 ohms
Headphone Jack:	3.5mm stereo phone
External Antenna:	Headphone cord coupled
Power Requirement:	9VDC battery
Dimensions:	2.25" x 4.6" x .9" Case
Weight:	4 oz. with battery



The ABM1...Reviewed in the November 2006 Issue of Monitoring Times
Author Bob Grove reviews the Ramsey ABM1 Passive Airband Monitor...

"I can't see the planes anywhere, but the ABM1 can hear them, and obviously from many miles away"

"Ramsey provides a nice manual with an introduction to air-band monitoring, and which contains a complete schematic diagram of the monitor, along with stage identification"

For information on this article, visit www.monitoringtimes.com



- ✓ Rock solid dual conversion PLL receiver!
- ✓ Airport runway lighting controller output!
- ✓ Full band scanner mode
- ✓ 4 user memory scanner banks, 20 frequencies each
- ✓ Full band skip scanner mode
- ✓ Adjustable skip scanner timing
- ✓ Internal front panel speaker
- ✓ External antenna input, speaker out, headphone out
- ✓ Stylish and shielded metal enclosure

***The Ultimate & Affordable Aircraft Receiver...
Even Controls Runway Lights!***

Continuing the legacy of our famous AR1 we decided to design the ultimate aircraft receiver kit. Now you're not limited to an all band receiver or scanner that has substandard performance in the AM aircraft band, but instead can have a super performance receiver designed specifically for the best aircraft reception possible! To begin with, we designed it with the latest technology, utilizing a rock stable synthesized PLL dual conversion receiver. We gave it superb image and adjacent channel rejection to allow you to lock onto the signals you want and not to be bothered by those you don't!

Once we got the RF portion designed we took a close look at the features desired in such a receiver. We gave it a neat 2x8 line LCD display to show you all the functions. Control of modes and setups is obtained through the front panel controls and confirmed on the LCD display. On/Off/Volume and Squelch controls are also provided on the front panel. We even gave it a front panel speaker in case you stack the lighting controller or something else on top of it!

So far we've described the ultimate aircraft receiver that's not only the perfect field monitor for a hangar or airport manager's office, but for the serious enthusiast. Can it get any better than that? Sure can!

The top request we've had for a professional aircraft receiver was to embed automatic runway lighting control. Consider it done! The lighting controller follows the standard protocol for remote runway lighting. The pilot "keys" his microphone on the local CTAF channel for the specified number of times. All you need to do is set the receiver for the lighting control mode, then make sure the squelch is closed and will open on a suitably strong signal. Typically the number of "keys" or "events" according to the receiver control the lighting as follows: 3 events, 25% brightness; 5 events, 50% brightness; and 7 events, 100% brightness. The AR2's adjustable lighting timer sets turn-on duration to your needs.

And what happens in the event of a local power failure or interruption to the AR2? Absolutely nothing! All receiver settings and all lighting control settings are saved in the internal memory. The rear panel lighting control output of the AR2 connects to our AR2L to interface with individual runway lighting control circuits.

As we do with all of our kits, a detailed instruction manual not only leads you through the step-by-step construction and assembly procedures, it teaches you the circuit theory as well. Learn all about RF receivers and how a dual conversion PLL radio works! You'll be proud to tell your friends that you built this outstanding aircraft receiver!

Includes the matching case and knob set and power supply. For the aviation professional that is not interested in building the receiver, the AR2 and the lighting controller are also available factory assembled and tested, ready to go. Just plug it in and you're all set. *(I can't get this thing off my desk, now I'm addicted to listening to Rochester approach!)*

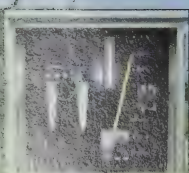
SPECIFICATIONS	
Frequency Range:	117.975 MHz to 137.000 MHz 25kHz steps
Receiver Type:	Dual Conversion PLL
IF Frequencies:	10.7 MHz & 450 kHz
Receiver Sensitivity:	Less than 1 uV across the band
Image Rejection:	Greater than -80 dB
Adjacent Ch. Rejection:	Greater than -40dB
Scanner Banks:	4, 20 frequencies each
Audio Output:	1 watt, 8 ohms
Light Controller Output:	3 events, 5 events, 7 events output to controller
Power Requirement:	12VDC, 500mA
External Antenna:	BNC female, rear panel
Dimensions:	5.55"W x 6.45"D x 1.5" H



AR2	Synthesized Aircraft Receiver Kit With Case and AC Power Supply
AR2WT	Factory Assembled AR2C With Case and AC Power Supply
AR2L	Plug-In Runway Lighting Controller Interface Kit With Case & Power Supply
AR2LWT	Factory Assembled AR2LC With Case and AC Power Supply

\$199.95
\$269.95
\$59.95
\$99.95

Review #22 in Action!



was also obtained in an experiment with a 200 V HV supply and a 200 pF capacitor.





KIT

*Kit Planes Magazine...
"Puts You In The Pilot's Seat!"*

Tune into the exciting world of aviation and learn the circuits at the same time with the AR1C Aircraft Receiver! As the feature article in Kit Planes Magazine said "It Puts You In The Pilot's Seat"! Listen to the airlines, big business corporate jets, hotshot military pilots, local private pilots, control towers, and other interesting and fascinating air-band communications. You'll hear planes miles away as well as all local traffic and control towers.

The AR1C features smooth varactor tuning of the entire air band from 118 to 136 MHz. An extremely effective AGC and superheterodyne circuitry make it a super performing unit. Variable squelch mutes the receiver between conversations. Audio output jack drives any standard speaker or headphone. Includes our custom case & knob set as shown for a great looking finished receiver! Operates on 9 VDC battery (not included). Case measures 5"W x 1 1/2"H x 5 1/4"D.

AR1C Aircraft Receiver Kit With Case

\$44.95

Shortwave Converter

- ✓ Receives and converts two (1 MHz wide) shortwave bands to standard AM band for listening on your existing AM radio
- ✓ Pushbutton switches provide easy selection of SW1, SW2 or AM Broadcast
- ✓ Tuning performed on AM radio
- ✓ Built-in antenna switching

Inexpensive Start To SWL!

The SC1 converter brings the sounds of the world right into your car radio or home stereo (set to receive AM broadcast band). Front panel push switches let you choose easily between regular AM radio and the shortwave bands. An additional switch allows the selection of any two bands of interest, each 1 MHz wide.

Set one range for daytime frequencies and one for nighttime when propagation is different; choose any two frequencies between 3 and 22 MHz. Frequencies are tuned on your AM radio, making it easy to log stations or set presets. A built-in antenna switch automatically switches the existing AM antenna to either the radio or converter, making hook-up/operation easy and fast. External power jack for 9 to 12VDC is a standard 2.1mm female. Included case measures 5"W x 1 1/2"H x 5 1/4"D.

**SC1C Shortwave Converter Kit With Case
110VAC Power Adapter**

**\$39.95
\$9.95**



KIT

*The Perfect...
"Beginner's Receiver"*

Here's a complete shortwave radio guaranteed to inspire awe in any listener. Imagine tuning in the BBC, Radio Moscow, Radio Baghdad and other services with just a few feet of antenna. This very sensitive (about a microvolt!) receiver is a true superhet design with AGC and plenty of speaker volume.

Smooth varactor diode tuning allows you to tune any 2 MHz portion of the 4 to 20 MHz frequency range, and the kit conveniently runs on a 9 volt battery (not included). Our matching custom case and knob set gives your radio a finished, polished look. Amaze yourself and others - see how you can listen to the world on a receiver you built in an evening. Drives any speaker or earphone. Included case measures 5"W x 1 1/2"H x 5 1/4"D.

SR2C Shortwave Receiver Kit With Case

\$44.95



KIT

Shortwave Receiver

- ✓ Tunable over 2 MHz bandwidth anywhere in the 4 to 20 MHz Shortwave Band
- ✓ Clean superheterodyne design with automatic gain control
- ✓ Extremely sensitive front end!

Get the right Tools for the Job!



...See our full line of tools on page 71!



FM Broadcast Band Receiver

- ✓ Standard FM receiver, with larger tuning range of 70 to 110 MHz!
- ✓ Ideal for FM wireless mics, SCA programming, or standard FM broadcasts
- ✓ Demodulated audio output for driving our SCA1 decoder

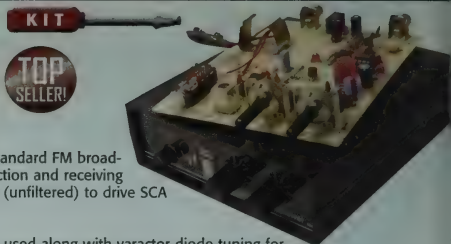
Perfect For "Out Of Band" Listening!

With a frequency range of 70 MHz to 110 MHz the FR1C has become extremely popular for receiving the standard FM broadcast band (88-108 MHz) as well as large portions on each side, making it great for bug monitoring or detection and receiving SCA broadcast outside of the band. Unlike most FM receivers, the FR1C includes a separate demod output (unfiltered) to drive SCA decoders including our SCA1 SCA Decoder below.

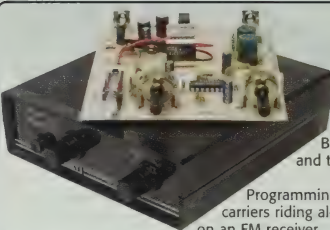
The sensitive front-end features one microvolt sensitivity with a standard 10.7 MHz IF. An FM detector IC is used along with varactor diode tuning for optimum performance. Audio output is rated at 250mW and will drive any 4-45 ohm speaker or headphone (not included). Runs on a standard 9VDC battery (not included). Includes our matching custom case set, measuring 5"W x 1 1/2"H x 5 1/4"D.

FR1C FM Broadcast Band Receiver Kit With Case

\$34.95



KIT
TOP SELLER!



KIT

How Do They Get That Commercial Free Music?

Believe it or not, they get it off the local FM radio station, but with a special decoder. Now you can build your own decoder and tap into the wealth of programming available to those "in-the-know"!

Programming available runs the gamut from stock quotes, to rock music, to easy listening, to all news. These services are "hidden" in subcarriers riding along with the standard FM radio station's usual programming. The decoder connects to the detector output (unfiltered audio) on an FM receiver. If your receiver does not have such an output, consider our FR1C FM Receiver above! Tune into what you've been missing, try the SCA1. Includes a custom case set to match the FR1C receiver above. Runs on a standard 9VDC battery. Case measures 5"W x 1 1/2"H x 5 1/4"D.

SCA1C SCA Decoder Kit With Case

\$39.95

Speech Scrambler & Descrambler

- ✓ Full duplex operation allows scrambling and descrambling at the same time
- ✓ Bypass mode provides quick change from direct audio to descramble

KIT

Wired & Tested

Decode That Garbled Gibberish!

Communicate in total privacy over your radio! This is the popular SS70A descrambler/scrambler that you've read about in all the Scanner and Electronic magazines. The technology used within the unit is known as speech inversion which is compatible with many police department systems; hook it up to your scanner speaker terminals and you're in business. (However, always be sure to check with your local authorities to ensure that you're not straying into any unlawful communications reception.)

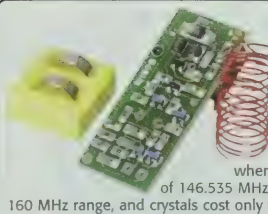
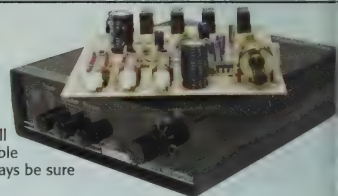
The SS70A is full duplex in operation - you can scramble and unscramble at the same time. Easily configured for any use! Easy to build since all complex circuitry is contained in a custom ASIC chip which provides clear, clean audio. Powered by 9 to 15VDC, with 3.5mm mini phone type input/output jacks. The included case measures 5"W x 1 1/2"H x 5 1/4"D.

SS70C Speech Scrambler/Descrambler Kit With Case
SS70WT Factory Assembled & Tested SS70C With Case And Power Supply
AC125 110VAC Power Adapter

\$39.95

\$69.95

\$9.95



TOP SELLER!

Super Stable Crystal Controlled!

KIT

Wired & Tested

Model Rocket Tracking & Telemetry Transmitter

- ✓ Easily track your rocket using a scanner receiver!
- ✓ Crystal controlled - no frequency drift!
- ✓ FM transmission!
- ✓ Subminiature SMT construction to fit any application!

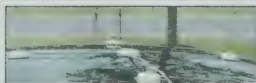
The sky's the limit for this super stable, drift free transmitter! Most low cost transmitters are tunable and subject to frequency drift when subjected to temperature variations and vibration, etc. The MR6 frequency is set by a crystal to a frequency in the 2 meter Ham band of 146.535 MHz, easily picked up on any scanner radio or 2 meter rig. Changing the crystal allows you to change frequency anywhere in the 140 to 160 MHz range, and crystals cost only five or six dollars.

The telemetry/data input on the MR6 will accept any audio frequency telemetry source from your application's sensors. Transmission range is approximately 1/4 mile line of sight. The MR6 uses the latest in SMT surface mount technology and parts, so if you want to learn more about SMT, this is the kit for you! Don't be afraid of losing those small parts; we even include a few extras just in case you sneeze and lose a part! Power is supplied by a 3 volt Lithium camera battery or a pair of watch batteries which are included.

MR6 Model Rocket Tracking Transmitter Kit
MR6WT Factory Assembled & Tested MR6

\$44.95

\$79.95



**Check out our famous DDF1 Doppler Direction Finder on Page 46...
Used throughout the world to easily track down hidden transmitters!**



KIT

**Get On The Air...
For Under \$40!**

These little rigs are burning up the airwaves as young and old alike are rediscovering the fun in building their own equipment! Our detailed, step-by-step instruction manuals make building an enjoyable and rewarding experience. You're guided carefully to the completion of a unit that not only works, but will provide hours of operating pleasure. These trusted and proven Ramsey all-mode mini rigs are routinely used worldwide by Hams of all ages.

You'll find you don't need high power - K7IRK worked and QSL'd all states, plus global DX QSOs from Argentina to the former USSR—with only 2 mW! You don't need hundreds of watts, thousands of dollars or massive equipment; you'll find it's more fun with less!

These little receivers are based upon the SA-602 that we read about in Ham magazines and handbooks. Available in 20 meter, 30 meter, and 40 meter versions, the receivers are true superheterodyne direct conversion - a simple design that does not require the use of fancy IFs, RF filters, or exotic mixers; in short, the ideal design for easy hobby building. Only recently have high performance ICs become available that enable such circuitry to be constructed. Beginners can easily build these receivers. And, experienced amateurs and QRP enthusiasts can use them as a reliable, economical, basic foundation for modifications.

Our single PC board has plenty of room for lots of modifications and hook-ups - tinker to your heart's delight. Suggestions and technical info are included in every receiver manual. Isn't this what Ham radio is all about? Operates on 9 V battery (not included). Included case measures 5"W x 1 1/2"H x 5 1/4"D".

HR20C	20 Meter Receiver Kit With Case
HR30C	30 Meter Receiver Kit With Case
HR40C	40 Meter Receiver Kit With Case

**\$39.95
\$39.95
\$39.95**

QRP Amateur Radio Mini-Transmitters

- ✓ Four transistor circuit, oscillator, RF amplifier chain, and clean keying stage
- ✓ RF output of approximately one watt (3/4 W for QRP20)
- ✓ Pi-network output for good matching and harmonic suppression
- ✓ Provision for two internal crystals (one crystal provided), front panel switching
- ✓ VCXO tuning, frequency can be tuned approximately 7 KHz around XTAL frequency
- ✓ Available in 20 meter, 30 meter, or 40 meter versions

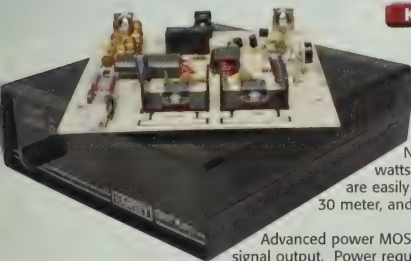
These nifty little CW transmitters are practical and economical take-along rigs for trips, camping, teaching or just amazing yourself with what a watt will do! With an exceptional manual of over 20 pages, the detailed step-by-step instructions guide you to a perfectly operating finished transmitter. They are available in 20 meter, 30 meter, and 40 meter models.

The rigs use a standard crystal that is connected into a VCXO circuit - which means that you can tune around the crystal's frequency by up to 20 KHz - thus giving you stable crystal control while still being able to tune around! A front panel switch lets you choose between two crystals; we include one, you can add another of your choice. A built-in T-R switch allows break-in operation.

Of course, these transmitters interface perfectly with our QRP Mini-rig receivers and our CMOS CW keyer! And for the real Ham, there's plenty of room inside the included case for your own circuit modifications and experiments. These little rigs are often the heart of many QRP operator's stations. Modify "til the cows come home," or just use them as they are - these little rigs pack a lot of performance into an economical package. Runs on 12 VDC at 200 mA. Included case measures 5"W x 1 1/2"H x 5 1/4"D".

QRP20C	20 Meter Transmitter Kit, Includes 14.060 MHz Xtal And Case
QRP30C	30 Meter Transmitter Kit, Includes 10.108 MHz Xtal And Case
QRP40C	40 Meter Transmitter Kit, Includes 7.040 MHz Xtal And Case
IC125	110VAC Power Adapter

**\$39.95
\$39.95
\$39.95
\$9.95**



KIT

**Cut Through The QRM
With 20 Watts!**

Need a little extra boost for your QRP rig? This nifty little amplifier may be all you need. Believe it or not 20 watts is only 7db (about one S unit!) less power than a full sized commercial transceiver. These compact amplifiers are easily driven by any of our QRP transmitters or any other unit in the 1/2 - 2 watt range, and are available in 20 meter, 30 meter, and 40 meter versions.

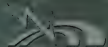
Advanced power MOSFETs are used for the utmost in efficiency and purity, while a multistage low pass filter is used to assure a clean signal output. Power required is only 12 VDC at 2 to 4 amps, depending upon power output. Complete step-by-step instructions are provided which make building the kit a breeze. The amplifier works well for all modes: CW, SSB and AM. Included case measures 5"W x 1 1/2"H x 5 1/4"D".

AMP20C	20 Meter QRP Amplifier Kit With Case
AMP30C	30 Meter QRP Amplifier Kit With Case
AMP40C	40 Meter QRP Amplifier Kit With Case

**\$49.95
\$49.95
\$49.95**

QRP Amateur Radio Linear Amplifiers

- ✓ Works great with Ramsey QRP rigs or any other 1-2 watt transmitter
- ✓ Built-in T/R relay automatically switches between receive and transmit
- ✓ Operates all modes; CW, SSB, or AM



KIT

Wired & Tested

Doppler Direction Finder

**TOP
SELLER!**

- ✓ Track down jammers and hidden transmitters with ease!
- ✓ Elegant and cost effective design thanks to WA2EBY!
- ✓ Featured in QST Magazine
- ✓ Convenient LED 22.5 degree bearing indicator
- ✓ Adjustable damping rate, phase inversion, scan enable/disable
- ✓ Utilizes high speed CMOS technology for signal conditioning and audio processing!

Track Them Down Quick!

Get in on the fun of radio direction finding (RDF) with this super kit! The latest in affordable Doppler direction finding equipment available in a



complete kit form ...this one even includes the receiving antenna assembly! A must for the "fox hunter" at an unheard of price! Radio direction finding is a fascinating hobby and is becoming more and more popular in today's portable world.

With the increasing number of intentional jammers and other unknown transmitters around, Doppler DF locators have become the rage with a display that gives you a direct bearing on the location of the transmitter. Pretty neat trick considering you don't need multiple separate receivers at different locations to triangulate on the mystery transmitter! The kit includes the Doppler Direction Finder display unit and all the parts necessary to build your own four point, 5 piece magnetic antenna assembly for easy setup and use. Operates on 12VDC, and includes a matching 12VDC power plug for custom integration and connection into your vehicle or portable power supply. Easy to hook up to any FM receiver. Transmitter (the object of your DF'ing) need not be FM, it can be AM/FM or CW.

Requires only a connection to your receiver's speaker jack and radio's antenna. The whips can be cut and optimized for any frequency from 130-1000 MHz. An easy to build, reliable kit that compares most favorably to commercial units costing upwards of \$1000.00! Comes complete with matching case, 12VDC plug, magnetic antenna kit with cables, and a comprehensive instruction manual. (Sorry, the Dodge Stratus above isn't included, my daughter totaled it! She looks happy about it!)

DDF1 Doppler Direction Finder Kit, With Case, Power Cable, And Magnetic Antenna Kit
DDF1WT Factory Assembled & Tested DDF1 With Case, Power Cable, And Magnetic Antenna Kit

\$169.95
\$269.95

Foxhound Radio Direction Finder

KIT

- ✓ Pin diode switching of antennas, coupled with filters, determine direction of source signal as indicated by a pair of LEDs
- ✓ Sensitive metering allows easy "zeroing-in" on transmitter!
- ✓ Includes two telescoping whip antennas
- ✓ Features a built-in T/R switch!

**Join The Wild
And Wacky Fox
Hunt Craze!**



The Foxhound connects to any radio through the speaker jack and antenna connector and will allow you to easily zero in on the exact direction of an unknown transmitter, be it aircraft, two-way radio, Ham or even TV. The Foxhound uses a pair of telescoping whip antennas which are manually turned (by you!) until the sensitive meter indicates the lowest reading.

This direction finder uses the latest technology for trouble-free, solid operation. The antennas are alternately switched on and off using PIN diodes. The outputs are then passed thru a high-Q audio filter and synchronously detected for phase shift. A pair of LEDs tell you in which direction you should rotate the antennas- to the right or left.

We provide the telescopic whip antennas and ask you to provide a two foot long "boom" on which to mount them. And, as an added feature, we've included an automatic T-R switch! The T-R switch is ideal for handie-talkie usage; if you wish to transmit with your radio - go ahead, the Foxhound will sense your transmitter power and automatically switch itself out of the circuit while you talk. Be the one with the answers, win those transmitter hunts, track down the jammers; you'll do it all with your Foxhound! Operates on internal 9 Volt battery or 12VDC, via a 2.1mm female power jack. Includes a custom case set for super-nice looking finished kit! (No foxes were injured or harmed during DF1 development!)

DF1C Foxhound Direction Finder Kit With Case
AC125 110VAC Power Adapter

\$74.95
\$9.95



KIT

**Low Cost...
Easy To Build!**

Mini VHF Series Receivers

- ✓ Tunes any 5MHz portion of selected receiver band
- ✓ Excellent performance, less than 1µV sensitivity
- ✓ True Superhet Receiver with sharp ceramic IF filters
- ✓ Front panel volume, squelch, and tuning controls

There are no short cuts taken in the design of these units-sensitivity is equal to full size monitor receivers or scanners. Schools, scout troops, clubs and hobbyists use these receivers for teaching, monitoring, and just plain building enjoyment. Any one of these little receivers is ideal for easy chair listening, and with no big clunky box and wiring to aggravate the XY! All four receivers can be tuned outside of the intended amateur bands. For example, the FR146 two meter receiver will tune any 5 MHz segment from 130 to 180 MHz. Choose your band and enjoy FM repeater and simplex monitoring on a budget! Help a newcomer discover the 220 MHz novice band. Listen in on exciting 10 Meter international FM action. Rediscover the fascination of 6 Meter sporadic E band openings and uncrowded new FM repeaters. For a professional finished look, our matching case and knob set is included. Kit includes detailed step-by-step manual that carefully guides you to a finished working radio. Runs on a standard 9VDC Battery. Case measures 5"W x 1 1/2"H x 5 1/4"D.

FR146C 2 Meter Receiver Kit With Case
FR6C 6 Meter Receiver Kit With Case
FR10C 10 Meter Receiver Kit With Case
FR220C 220 MHz Receiver Kit With Case

\$44.95
\$44.95
\$44.95
\$44.95



2-Meter Receiver Preamplifier

- ✓ 2 Meter Preamp with the sharpest filtering available!
- ✓ Can be powered up the signal coax (9 to 15 VDC)
- ✓ Helical filter for fantastic intermod rejection

Here's the ideal preamp for repeaters, base stations, mobiles - anywhere a selective, low noise signal boost is needed. Unlike other preamps the PR100 features extensive RF filtering to crush intermod before it reaches your radio.

Two poles of sharp Helical filtering combined with a 3 pole L-C tank allow only signals of interest to reach your receiver. A low noise microwave bipolar transistor provides an excellent 1 dB noise figure while remaining ruggedly insensitive to static and strong signals. Preamp is easily configured to be powered via the coax (for mast mount applications) or powered through a separate power cable. Kit is designed to fit snugly into a 3" long piece of 1 1/2" PVC pipe with end caps, making an ideal outdoor enclosure. Runs on 9 to 15 VDC. Size: 4"W x 7/8"H x 1 3/8"D.

PR100 2 Meter Receiver Preamp Kit

\$34.95

KIT

**Great Gain And
Super Selectivity!**



KIT

**The Quick And Easy
Preamplifier!**

Low Cost Receiver Preamps

- ✓ Low noise (typically < 1 to 1.5 dB)
- ✓ High Q tuned circuits (very narrow band) prevent out-of-band signals from overloading front-end
- ✓ Available in 2 meter, 220 Mhz, 440 MHz

Put some new "ears" on your rig with one of these hot little preamp kits. Their high gain combined with low noise will improve most any receiver. Fully protected against overload and designed for low current and stable operation, they employ high Q tuned circuits which restrict out-of-band signals which can cause intermod blanking and overload of your radio's front-end.

Don't be misled by GaAs FET claims! The cheap dual-gate FETs (manufactured for TV tuner usage!) used by others just don't come close to the performance of these preamps designed with NEC microwave transistor devices. Gain is typically 16 to 20 dB and noise figure is 1 dB @ 2 Meters, 1.2 dB @ 220 MHz, and 1.4 dB @ 440 MHz. Compact design for easy installation into most any rig. Operates on 12 to 15 VDC. Size: 1" x 3/8" x 1 1/2".

PR10 2 Meter Receiver Preamp Kit
PR20 220 MHz Preamp Kit
PR40 440 MHz Preamp Kit

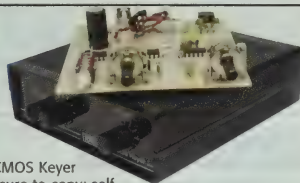
\$14.95

\$14.95

\$14.95

EZ Key CW Keyer

- ✓ Perfect CW in one night!
- ✓ Ideal for code practice
- ✓ Great features-budget price



Works With Any Rig!

Add to your CW fun with our low cost CMOS Keyer Kit. You'll send clean code that's a pleasure to copy; self completing dots and dashes with properly weighted spacing and timing are all programmed into the CW7C's design. Assembly of the keyer is fast, easy, and fun. Our step-by-step instructions lead you to a finished unit in only one evening. Great for beginners to learn proper and perfectly formed CW right from the start!

Built-in tone, adjustable pitch, and front panel speed and volume controls are featured. The CW7 is the ideal companion to our QRP transmitters or any other rig you may own. You need to supply an external set of paddles (Manual includes details on constructing economical paddles). The included custom case and knob set matches our QRP receivers and transmitters and gives your keyer a nice attractive finished look. Runs on a standard 9VDC battery. Case measures 5"W x 1 1/2"H x 5 1/4"D.

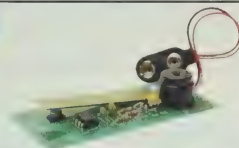
CW7C CW Keyer Kit With Case

KIT

\$34.95

Code Practice Oscillator

- ✓ Great starter kit for young or old!
- ✓ Ideal scouting project
- ✓ Practice your code anywhere!



Learn Code The Simple Way!

Looking for a great starter kit to spark the interest of a future engineer? Looking for an easy way to either learn or practice your code? This little code practice oscillator is inexpensive, easy to build and easy to use, and features an audio tone adjustment for your listening pleasure.

The unique "key" built on the board simulates a standard CW key making it unnecessary to connect an external key. A small built-in speaker provides you a clear audible tone complete with adjustable pitch. Uses the ever popular 555 timer IC with full theory of operation to guide you through the construction.

Handy 9 VDC battery operation insures hours of enjoyment and the chance to practice your CW code anywhere you go. Size: 3 1/2" X 1 1/2" X 3/4".

CPO3 Code Practice Osc. Kit

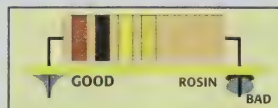
KIT

\$14.95

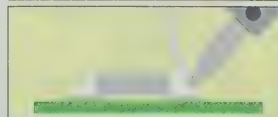
RAMSEY'S TEN COMMANDMENTS OF GOOD PC-BOARD SOLDERING

1. If the soldering iron tip is covered with burned rosin, it cannot heat your connection very well.
2. If you heat only the wire and not the wire and PC trace together, a cold, bad connection is likely.
3. If your soldering tip is big enough to bridge two adjoining connections, it probably will!
4. Dirty, grubby solder will contribute to dirty, grubby connections.
5. Any use of acid core (plumbers!) solder in electronics work will destroy everything... DON'T USE IT!
6. A connection in a large area of PC-board copper requires more heat than one pin of an IC.
7. If your connection looks dull or brittle, it's no good.
8. If your connection looks like a ball instead of a shiny cone, it's no good.
9. Thin fresh shiny rosin core solder is easier to use for PC-board work than thicker "hardware store" solder.
10. Pre-tin any stranded hookup wires leading in and out of your PC-board kit project. It will prevent problems later!

Through Hole
Soldering



Surface Mount
Soldering



**robotics** Pronunciation: rO-'bā-tiks

Technology dealing with the design, construction, and operation of robots in automation. (From the "need to know" department!)

Sound Reversing Car**TOP
SELLER!**

- ✓ Forward on noise!
- ✓ Reverse at obstacle impact!
- ✓ Sound activated

Backs Away From Obstacles!

One of our most popular robotic cars! This sporty little yellow car advances forward when it hears sound. When it touches something it backs up and continues on! It knows to turn around!

Uses a built-in hi sensitivity microphone to detect noise (like a clap) to make it move forward. Runs on 2 AA batteries not included. Your kids, cat, and dog will be amazed!

21881 Sound Reversing Car Kit



\$19.95

Line Tracking Mouse

- ✓ Follows a black line!
- ✓ Sound activated
- ✓ 2 sets of gear motors

Uses Photo Interrupters!

How magical! A smart robot mouse tracks a black line using a photo interrupter for its eyes!

A craze to watch! Create a twisting and turning Grand Prix style road layout yourself with black tape on a light background. Watch the cute little mouse track the line you made to find its target! The kids will love it! Includes 2 sets of gear motors. Runs on 4 AA batteries, not included.

21880 Line Tracking Mouse Kit



\$34.95

Hexapod Monster

- ✓ IR detector diode "eyes"!
- ✓ 2 sets of gear motors!
- ✓ Six crawling legs

IR Eyes Detect Obstacles!

Nothing like having your own Hexapod Monster in your house! Well, this one makes it exciting and educational as well.

Uses IR emitting diodes for its eyes and moves with his six huge legs. Moves straight until its eyes detect an obstacle and then turns left and continues to move straight until its next obstacle. 2 separate sets of gear motors are included with the kit along with the IR detectors. Mechanics use 2 AA batteries and the electronics use a standard 9VDC battery. Batteries not included. Add a Hexapod to your house today!

21883 Hexapod Monster Kit



\$24.95

Amphibious Solar Vehicle

- ✓ Built-in solar panel!
- ✓ Runs on land or sea!
- ✓ Learn solar power the fun way

Learn How Well Solar Works!

Light or no light, flat surface or water, it doesn't matter with the solar powered Amphibious Vehicle! Built-in solar panel (1.4VDC at 350mA) will run the vehicle outdoors in the sun or indoors with a suitable light source. But watch it die when the sun goes down or the light goes out! The perfect demonstration of the good and bad aspects of solar power!

Learn exactly what solar panels are made of and how they work. Learn their limitations while you're powering this neat vehicle that works on land or water! Can be used indoors or at night with a single AA battery, not included. Includes extensive documentation on solar cell theory and construction. Mechanical assembly required. Fun and safe to use in a pool! From Owikit.

OWI688 Amphibious Solar Vehicle Kit

\$39.95

Roly Poly Robot

- ✓ Two big wheels!
- ✓ Always rights itself!
- ✓ Pets love them

Always Gets Back On Its Feet!

The Roly Poly Robot speeds across the floor on its two big cyclonic wheels the moment you turn it on. But that's only beginning of the fun!

During its travel it will tumble, fumble, and stumble, however the engineering genius behind the Roly Poly gets it back on its feet whenever it tumbles to start a new path of exploration. Both kids and pets love following this little guy around watching him tumble into new paths! You can even personalize the domed wheels with your own drawings and patterns. Less than 20 parts plus the worm gear. The detailed assembly and theory manual covers gear structure, battery wiring, switches, motors, and the principles of Ohms law. Requires standard AA batteries, not included. From Owikit.

OWI9855 Roly Poly Robot Kit

\$19.95

**What A Blast... Literally!**

There's cool, then there's definitely cool... and the Air Zinger is definitely cool! Built on air technology, this robot can inhale or blast out the included ball from its cannon-like loader snout! Now THAT's cool!

Zigging and zagging is no problem for the Air Zinger with its built-in wired remote controller. You can easily move it forward, back, left, and right. What's amazing is the whirlwind effect you create when you activate Air Zinger's wind magnum propeller! When activated to retrieve the ball it's like watching a largemouth bass inhale its lunch! On your command the ball is launched again. Create your own games, tournaments and rules. Quick and easy mechanical assembly.

Electronics require a standard 9VDC battery and mechanics require 3 standard AA batteries, not included. From Owikit.

OWI9003

Air Zinger Air Car Kit

\$44.95

Air Zinger Ball Blasting Robot Car

- ✓ Air technology!
- ✓ Inhales and blasts out a ball!
- ✓ Wired controller directs movement

**America's #1
Source For
Exciting,
Educational & FUN
Kits!**



RAMSEY ELECTRONICS, LLC
590 Fishers Station Drive
Victor, NY 14564 USA

- ◆ **Build It!**
- ◆ **Learn It!**
- ◆ **Achieve It!**
- ◆ **Enjoy It!**

It's Easy To Order!

Payment – Check, money order, and credit card (MC, VISA, American Express, Discover) are all accepted. If paying by credit card, please include the full card number and the expiration date. If you are paying by credit card, you must provide the billing address exactly as it appears on your credit card statement.

Sales Tax – NY residents must add appropriate sales tax unless a signed resale certificate accompanies your order.

Prices – Prices shown are those in effect at the time of publication. We work to hold prices firm, however prices are subject to change without notice. Current prices will prevail at the time an order is placed. Visit www.ramseykits.com for any last minute updates!

Shipping –

Continental U.S. customers – We normally ship via Parcel post or UPS depending on the size and value of the order. If we are shipping via UPS you must provide a physical address as UPS will not deliver to P.O. Boxes. Add \$7.95 for shipping, handling, and insurance on all orders. Express and air shipments are extra and priced at cost. COD is an additional \$10.00.

Alaska, Hawaii, and Puerto Rico – Specify USPS First class, UPS 2nd day or UPS overnight only. The amount will be added to your order.

Canadian customers – Make checks payable in U.S. funds or use a credit card. Add 20% to the cost of your order for shipping to a maximum of \$50.00 for parcel post shipment. If you request UPS for delivery, we will confirm the amount to you prior to shipment. **These charges do NOT include any international duty charges.** Be aware, UPS shipments may be delayed in customs.

Overseas customers – We will determine the best method and cost for your location, and will confirm to you before shipment.

Returns – Examine (do not build) any kit for up to 10 days. If not completely satisfied, return in the original packaging for a full refund. Kits that are partially built cannot be returned. Wired and tested items can also be returned if in their original packaging, suitable for resale within 10 days. Returns received after 10 days will be subject to a restocking fee.

Design Changes – From time to time we make design changes. Some items may differ slightly from photographs and descriptions in the catalog. You can be sure that such changes are made in the interest of better performance or appearance. In addition, with the fluctuating pricing changes of some electronic components pricing is subject to change.

Manual Preview – Looking at a kit and want to review it more closely? Our manual preview policy lets you purchase most of our manuals for \$5.00 (a few are more). Purchase price of the manual will be credited against your future associated kit purchase. You can also download most manuals (excluding the schematic) at no charge from our website at www.ramseykits.com

**Kits
Are
FUN!**

1-800-446-2295

**AM-FM BROADCASTERS, CAMERAS, TRANSMITTERS
HOBBY KITS, AMATEUR RADIO, TOOLS AND MORE**

ramseykits.com



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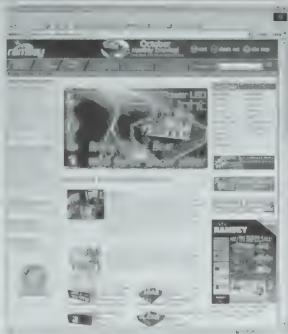
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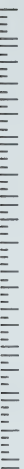


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**RAMSEY ELECTRONICS, LLC
590 Fishers Station Drive
Victor, NY 14564-9744**





Hydrazoid Alien Creature

- ✓ 4 long alien legs!
- ✓ Responds and reacts to sound!
- ✓ Built-in electret condenser mic

The Sound Sensing Alien!

Just your average Hydrazoid with the normal wacked-out alien type of legs! Its long and weird-looking legs make it walk in a way that's spellbinding to watch! Kids love it!

Like a few of the other robotic kits, the Hydrazoid uses a built-in high sensitivity microphone to detect sound. Utilizes one common DC motor for leg motion. Mechanicals and electronics require 2 standard AA batteries, not included. Mechanical assembly only, no soldering required. Measures 2 3/4" x 1 3/4" x 2 5/32". From iBotz.

MR1004 Hydrazoid Alien Kit

KIT

\$36.95



Spider III Robot

- ✓ Infrared beam control!
- ✓ Avoids obstacles in its path!
- ✓ PC board assembled or kit

Walks Like The Real Thing!

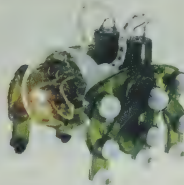
More people than just Gil Grissom will think this guy is really neat when they see him crawl around your house!

With its radical walking style this intelligent robot avoids interference by emitting an infrared beam which detects obstacles in its path. Then the infrared control takes over and sends a series of pulses out and back to alter the Spider's direction. Electronics require a standard 9VDC battery and mechanicals require 2 standard AA batteries, not included. From Owikit.

OWI972K Spider III Kit, Kit PC Board

KIT

\$49.95



Jungle Robot

- ✓ Climbs or walks on command!
- ✓ Sound activated!
- ✓ Ape-like animation

It's An Ape, No... It's A Robot!

You'll think you're watching an ape movie on TV! This "cute" little guy traverses hand over hand like an orangutan or walks on the ground like a gorilla!

Sound activated, he turns on and starts walking or climbing at your audible command and continues to walk for a pre-determined amount of time, then resets waiting for your next command. One of the neatest new designs with those big long "arms" that work in either mode. Kids can't help but love him!

Includes detailed mechanical assembly instructions as well as circuit theory. Requires a standard AA battery, not included. From Owikit.

OWI9870 Jungle Robot Kit

KIT

\$19.95



Two-In-One Gearbox

- ✓ 2 sets of gears!
- ✓ Includes shafts
- ✓ Set your speed

Set Your Own Speed!

We provide the motor, two sets of gears, metal shafts, gearbox, and other accessories in this gear kit. Use a different gear setting and you will have a different speed. See the tables below:

Gear Ratio 1:60, Reduction RPM 41:6

GEAR	TEETH	I.D.
Pinion Gear	10T	1.9mm
Face Gear	36T/14T	2.05mm
Double Spur Gear	36T/14T	3.05mm
Double Spur Gear	36T/14T	2.05mm
Spur Gear	36T/OT	2.9mm

Gear Ratio 1:288, Reduction RPM 41:6

GEAR	TEETH	I.D.
Pinion Gear	8T	1.9mm
Face Gear	36T/10T	2.05mm
Double Spur Gear	40T/10T	3.05mm
Double Spur Gear	40T/10T	2.05mm
Spur Gear	40T/OT	2.9mm

21130 2 In One Gearbox Kit

\$9.95



TriBotz Robotic Car

- ✓ Infrared, sound, and touch sensors!
- ✓ 2 wheels driven by 2 motors!
- ✓ Three robotics in one package!

Senses Everything!

TriBotz is like getting three robots in one single package! It uses sensors to avoid objects, sensors to follow a line, and sensors to respond to sound!

Includes a high sensitivity electret condenser mic, infrared proximity sensor, and light detectors for all three modes. Extensive documentation covers the how's and why's of all the circuits and technologies used, as well as the construction. Requires 2 standard AA batteries, not included. Mechanical assembly only, no soldering required. Measures 3 15/16" x 5 7/8" x 5 1/2". From iBotz.

MR1005 TriBotz Robotic Car Kit

KIT

\$54.95



Robotic Arm Trainer

- ✓ Learn all the motions!
- ✓ 5-switch wired control!
- ✓ Fun way to learn robotic control

Have Fun Learning!

This Robotic Arm Trainer teaches basic robotic sensing and locomotion principles while testing your motor skills as you build and control the arm! You can command the unit with its 5 switch wired controllers (with lights) to grab, release, lift, lower, rotate wrist, and pivot sideways 350°.

After assembly you can observe the dynamics of gear action through the transparent arm. Five motors and five joints allow for flexibility and fun! Great for educators, students, and home schoolers. Includes detailed documentation on robot control technology to help you learn the exciting world of robotic control. Mechanical assembly required. Runs on 4 standard D batteries, not included. From Owikit.

OWI007 Robotic Arm Trainer Kit

KIT

\$84.95



Knight Invader Turbo Car

- ✓ Built-in solar panel!
- ✓ 3 modes of propulsion
- ✓ Fast and fun!

Blow Them Off The Line!

The Knight Invader is a super race car that not only blows away its competitors at the starting line but also includes construction projects, teaches the principles of electricity, and demonstrates three different modes of propulsion.

It blows a fierce force of air to propel it off the starting line and challenges any competitor to keep up with it when it changes to direct DC motor drive! When on a "mission" the Knight Invader can change its transportation mode to solar power by adding the OWI608 solar panel kit giving it a secret mode of power. Requires 2 standard AA batteries, not included. From Owikit.

OWI6577 Knight Invader Car Kit

KIT

\$19.95

OWI608 Solar Panel Battery Kit

KIT

\$19.95



Selectable Gearbox

- ✓ Multiple mounting brackets!
- ✓ Three gear ratios selectable!
- ✓ Great Science Fair project

One Touch Selector!

This neat gear box can switch select three different gear ratios. If you need to drive pulleys, cars, wheels, or fans with either high torque or speed, look no further!

Adjustable mounting brackets allow for flexibility in project applications making it a breeze to fit your project.

With one touch you can select 6.8:1, 45.97:1, 310.74:1 or 17.68:1, 119.52:1, or 807.93:1 gear ratios. Motor voltage is 1.5-3.0VDC at .663A at 6,992 RPM. Measures 60mm x 25mm x 35mm. From Owikit.

OWIGB25 Selectable Gearbox Kit

\$14.95





KIT

It's The Real... Time!

I know, you saw the header line "Cola Clock" and wondered to yourself... exactly what are they up to now? What could they possibly mean by a "Cola Clock"??

Well, that pretty much says it! We have always been into really neat things and this one is no exception! First off, you have a neat digital clock and a very unique stand that resembles a cola can. And why would that be? This educational kit actually uses your favorite Cola soda drink as the power source! The bottom compartment is the "Cola battery section"; all you need to do is pour a small amount of soda into the compartment and it creates a chemical reaction just like a battery does! Voila! The digital clock comes on and runs!

The full color manual shows you how batteries work with a chemical reaction similar to your Cola Clock. All parts are easily identified and the clock is easy to assemble. Learn about batteries and have a lot of fun doing it. Plus, your family, friends, and teachers won't believe their eyes, plus you have a real time clock to see when it's time to go to the dentist! (Now we can add this application to the old one about cleaning rust from chrome bumpers!)

FUN285

Cola Clock Kit

\$19.95

Electric Circuits Lab

- ✓ Beginner's learning kit!
- ✓ 80 experiments
- ✓ From electricity to magnetics

**Learn Electric Circuits**

The perfect beginner's course to learn basic electricity and electronics.

Includes 80 electric experiments such as electromagnetics, electrostatics, electric motors, electric meters, electrodes, series and parallel circuits, electromagnetic compass, magnetism, making batteries, and static electricity.

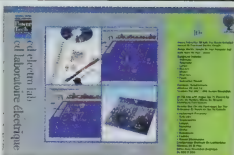
No soldering required. Requires 4 standard AA batteries, not included. From Power Tech.

EDU8100 Electric Circuits Kit

\$29.95

CD Electrolab

- ✓ Computer graphics lessons!
- ✓ "CAD" circuit design!
- ✓ Includes console & parts

Design With Your PC!

Wow, who would have thought that a basic learning lab kit would include "CAD" circuit design? This not only provides the convenience of computer aided design but makes it easy to understand circuit theory.

The unique interactive CD program lets you create an endless number of functional electric circuits right on your computer. Once the design is complete you build them on the console with the supplied parts! Includes a voltmeter, ammeter, lamps, buzzers, diodes, resistors, and fuses. Comprehensive learning manual covers the design and construction of all circuits. Requires Win95 or newer with a minimum screen resolution of 600x800. No soldering required. From Power Tech.

EDU8150 CD ElectroLab Kit

\$34.95

Solar Lab

- ✓ Learn & harness solar power!
- ✓ Watch it work in front of your eyes
- ✓ Over 150 activities included

Harness The Power Of The Sun!

This kit continues the educational and learning aspects of technology with the introduction of Solar Power!

Learn how to harness and conserve energy from the sun and auxiliary light sources. Activities include a solar furnace, stroboscope, moire patterns, electronic thermometer, photosynthesis, solar energy mobiles, producing electricity components, DC electric motor, solar cells, galvanometer, solar water heater and more! From Power Tech.

EDU8405 Solar Learning Lab Kit

\$29.95

Radio & Electronics Lab

- ✓ Advanced electronics circuits!
- ✓ Over 200 different circuits included
- ✓ Includes transistors and ICs!

Work With Over 200 Circuits!

Go beyond the basics and explore a multitude of circuits and applications with this advanced Radio Electronics learning kit.

More than 200 different circuits are included with a variety of components including transistors, integrated circuits, photo cells, speakers, resistors, and capacitors. The comprehensive manual includes circuits and theory for such circuits as a radio, music, logic alarm, games, industrial controls, and more. No soldering necessary. From Power Tech.

EDU8705 Radio & Electronics Kit

\$39.95

Energy Lab

- ✓ Learn all about energy sources!
- ✓ Build your own power plants!
- ✓ Over 200 activities

Learn The Creation Of Energy!

With this learning kit you will learn and experiment with the common modes of energy creation! Over 200 energy related activities are included with this lab such as making a windmill, the steam wheel, the electric motor, the on/off switch, how to light a light bulb, making your own battery, solar powered motors, lightning, the propeller, and more.

You will even illuminate an LED with electricity you produce! The detailed learning and assembly manual guides you through each energy experiment and its related test procedures. Experiments are safe and no soldering is required. From Power Tech.

EDU8950 Energy Learning Lab Kit

\$34.95

Physics Lab

- ✓ Have fun with physics!
- ✓ Understand nature's basic laws!
- ✓ Includes over 250 activities

Yes, Physics Can Be Fun!

The Physics learning lab takes you into nature's basic laws in a fun and exciting way certain to spark curiosity!

Like all Power Tech labs, the comprehensive guide takes you through more than 250 physics activities. These include air and gasses, pumps, siphons, Bernoulli's principle, specific gravity, water pressure, forces and motion, simple machines, sound waves, light and shadows, heat transfer magnetism, electric motors, and a lot more. From Power Tech.

EDU8200 Physics Learning Lab Kit

\$29.95

Chemistry Lab



- ✓ Makes it easy to understand!
- ✓ Safe for kids and adults!
- ✓ Over 120 experiments included

Learn Chemistry The Easy Way!

In my school days I found myself stumped with the periodic chart on the blackboard and couldn't get beyond that! This lab makes it interesting and fun to explore chemistry!

Contains over 120 unique experiments involving chemistry. Learn about chromatography, acids, bases, salts, indicators, reversible reactions, atoms, molecules, ions, and more. This chemistry is safe and complies with EN71 part 74. (Guess I needed this in school!) From Power Tech.

EDU8300 Chemistry Lab Kit

\$29.95

Super Chemistry Lab



- ✓ Kitchen chemistry fun!
- ✓ 100 fun activities!
- ✓ From electricity to magnetics

Your Kitchen Is Your Lab!

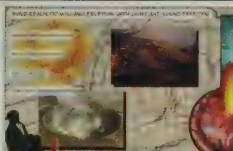
What a great place for youngsters to learn the basics of chemistry... their kitchen! And mom and dad will enjoy the fun too!

Over 100 kitchen activities relating to chemistry to keep your imagination wandering with excitement! Includes such fun activities as balloon tricks, gas canoe, making a geyser, cleaning old coins, cola volcano, removing an egg's shell without touching it, making invisible ink, cheese, finding iron in cereal and many more! From Power Tech.

EDU8350 Super Chemistry Lab Kit

\$29.95

Volcano Lab



- ✓ Make your own Volcano!
- ✓ Includes light and sound effects!
- ✓ Many activities

Get In Touch With Nature!

Definitely smaller in magnitude than Pompeii but this fun lab will allow you to create your own volcano complete with light and sound effects!

Understand nature's most powerful and awesome display of force. Make an erupting volcano with impressive effects. Trace the development of volcanoes and produce different types of eruptions. Other activities include making a fire extinguisher, making a lava light, chocolate lava, and much more. (Now I want some chocolate lava cake!) From Power Tech.

EDUCM011 Volcano Lab Kit

\$24.95

Ecology Lab



- ✓ Explore today's concerns!
- ✓ Understand the how's and why's!
- ✓ Over 150 ecology experiments

Understand Our World!

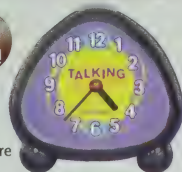
From the greenhouse effect to holes in our ozone layer this lab will guide you through the issues facing our world, and what we can do to help.

With over 150 experiments, you learn how a thermometer is built, the greenhouse effect, ice crystals, calorie calculations, how plants make oxygen CO_2 is heavier than air, the barometer, the weather in a casserole, spore prints from fungi, testing acid rain, bacteria in the air, biodegradability issues, smoke, and a lot more. From Power Tech.

EDU8650 Ecology Lab Kit

\$29.95

Talking Alarm Clock Kit



- ✓ Easy assembly without soldering!
- ✓ Creates three alarm sounds!
- ✓ Kids love them

Wake Up!

The Talking Clock Kit teaches you how electronic voices are made and is a real hit with the kids!

With the detailed and full color assembly and theory manual building the clock is a breeze, and there is no soldering required. When you're done you have a running alarm clock that features hourly reports as well as a "rooster crow" for an alarm! Runs on 2 standard AA batteries, not included. From AmeriKit.

AK220 Talking Clock Kit

KIT

\$19.95

Telephone Kit

- ✓ See-through case!
- ✓ Detailed training course included!
- ✓ Full featured tone/pulse phone

Learn How You Make That Call!

A very popular learning kit for young and old...or for anyone in between that uses a telephone and wants to know how they work!

The full-featured push button electronic telephone is housed in a transparent case to see the inner workings. Features pulse/tone dialing, automatic redial, ring on/off, and neon bulbs that light up when it rings! A complete training course is included with detailed theory, assembly and testing sections. Can be desk or wall mounted. Soldering is required. From AmeriKit.

AK700 Telephone Kit

KIT

\$21.95

Deluxe Solar Kit

- ✓ Includes 8 solar panels
- ✓ Comprehensive training manual included
- ✓ Starts at the beginning of solar power technology



Put The Sun To Work!

A great hands-on educational kit to learn exactly how Solar Energy works. Provides a neat bank of solar cells and all the related experiment materials to put the energy to work.

A unique solar cell "unit" provides a bank of solar cells that provide three independent 1.5VDC sources of power. Jumper connections with EZ connections are provided to wire up any of your experiments. Includes a motor, lamp, buzzer, tools, optical disks, and other accessories. You can easily learn how to make a solar circuit and how to increase or decrease voltage or current using series and parallel circuits.

You will be amazed when you produce power to run your small radio, calculator, cassette player and more.

SK40 Solar Deluxe Educational Kit

KIT

\$17.95

Radio Controlled Car Kit

- ✓ 7 remote control functions!
- ✓ Includes remote control!
- ✓ Full color assembly manual



Build It From The Ground Up!

One of the neatest and most exciting learning kits for the kids! You will be building the Turbo King R/C speedster from the ground up, ending up with a super fast car!

The detailed theory, assembly, and testing manual guides you through basic transmitters, receivers, and electronic switching theories. You'll also learn about gears, motors, integrated circuits, and printed circuit boards! You will construct each segment, explore the circuitry used, and test and troubleshoot it.

The end result? Turbo King with 7 remote functions, flashing top light and a full feature remote control! Electronics runs on a standard 9VDC battery and mechanics run on 4 standard AA batteries, not included. From AmeriKit. (What a fun way to learn electronics and R/C cars at the same time!)

AK870 R/C Car Kit

KIT

\$32.95



Easy To Learn 130 In 1 Electronics Lab

- ✓ No prior knowledge of electronics needed!
- ✓ Solderless connections for safe assembly
- ✓ Build 130 different circuits and see them work!
- ✓ Includes a comprehensive instruction & theory manual written for the youngest novice to understand!

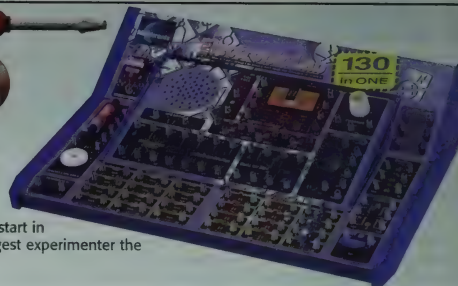
**A Great Start To Electronics...
With 130 Separate Projects!**

For 30 years, Ramsey has provided educational hobby kits giving thousands and thousands of kids their start in electronics. We've searched and searched for an Electronics Lab specifically designed to teach the youngest experimenter the fun and excitement of electronics.

The PL130 does just that! Learn the basics and theory of electronics the fun way, while building 130+ projects that you actually see working when you're done! The detailed 162 page instruction manual covers the hows and whys of every circuit, theory, parts identification, and description. We've looked at a lot of these kits and have turned them down because of the documentation. This one is a winner!

KIT

**TOP
SELLER!**



LOTS OF PROJECTS? YOU BET! Check them out!

Electronic Woodpecker
The Chirping Bird
Electronic Cat
Sonic Fish Caller
Machine Gun Pulse Oscillator
Electronic Motorcycle
Two-Tone Patrol Car Siren
Electronic Siren
Electronic Metronome
Electronic Grandfather Clock
Light-Controlled Electronic Harp
Horror Movie Sound Effects
Strobe Light
Rapid LED Display Switching (Persistence Vision Test)
Capacitor Discharge/High Voltage Generator
Capacitors in Series and Parallel
Resistors in Series and Parallel
Light Dimmer
Transistor Switcher
Transistor Circuit Action
Sound Amplifier
Flip-Flop Multivibrator with LED Display
Seven-Segment LED Digital Display Circuit
Basic LED Display
Transistor Control Switching of the LED Display
Transistor, CDS Cell and LED Display Circuit
Diode-Transistor Logic AND with LED Display
DTL OR Circuit with LED Display
DTL NAND Circuit with LED Display
DTL Exclusive OR Circuit
Transistor NOR Circuit with LED Display
Transistor Flip-Flop Circuit
Transistor Toggle Flip-Flop
Transistor-Transistor Logic Buffer Gate
TTL Inverter Gate
TTL AND Gate
TTL OR Gate
TTL Exclusive OR Gate
TTL NOR Gate
TTL Three-Input AND Gate
TTL AND Enable Circuit
TTL OR Enable Circuit
TTL NAND Enable Circuit
TTL R-S Flip-Flop

Toggle Flip-Flop Circuit Made from NAND Gate
TTL Line Selector
TTL Data Selector
TTL Astable Multivibrator
TTL Tone Generator
Winking LEDs
A One-Shot TTL
Transistor Timer with TTL
Buzzin' LED
Son of Buzzin' LED
Set/Reset Buzzer 1
Set/Reset Buzzer 2
Sound Machine
Big Mouth
Shot in the Dark
Variable R-C Oscillator
Oscillator with Turn-Off Delay
Temperature-Sensitive Audio Oscillator
Two-Transistor, Directly Connected Oscillator
Push/Pull Square Wave Oscillator
Pencil Lead Organ
LED Strobe Light
Electronic Organ
Daylight Early Bird
Intermittent Alarm Generator
Comparator
Basic Increase in DC Voltage
Constant-Current Source
Integrating Circuit
Schmitt Trigger Circuit
Noninverting Two-Power Supply Amplifier
Inverting Two-Power Supply Amplifier
Noninverting Single-Power Supply Amplifier
Two-Power Supply Differential Amplifier
Tone Mixing Amplifier
Power Amplifier Using Operational Amplifier
Voltage Controlled Oscillator Circuit
Operational Amplifier Buzzer
Burglar Alarm
Hand-Operated Sweep Oscillator
Falling Bomb Sound
Emergency Siren
First Aid Siren

Musical Tempo Generator
Operational Amplifier Winking LED
LED Flashing Light
Two-LED Winker
One Shot Light
LED Initials
Wake Up Siren
Voice-Activated LED
Logic Tester
Alternating Current Sound
Light Control Sound Circuit
Sound Alarm Circuit
Study Timer
Kitchen Timer
Three-Input AND Gate Using Operational Amplifier
Voice Level Meter
Power-On Reset Circuit
Delayed Timer
Pulse Frequency Doubler
White Noise Generator
DC-DC Converter with Operational Amplifier
Code Practice Oscillator with Tone Control
Crystal Set Radio (Simple-Diode Radio)
Two-Transistor Radio
Wireless Code Transmitter
AM Radio Station
Operational Amplifier Radio
Aural Continuity Tester
Conductivity Tester
Transistor Checker
Sinewave Audio Oscillator
Low Distortion Sinewave Oscillator
Twin-T Audio Oscillator
Pulse Oscillator Tone Generator
Audio Signal Tracer
Radio Frequency Signal Tracer
Square Wave Audio Oscillator
Sawtooth Wave Oscillator
Rain Detector
Water Level Buzzer with Operational Amplifier
Metal Detector
Water Level Alarm
Three-Step Water Level Indicator

Start today and learn the exciting world of electronics with this excellent starter learning lab. Just imagine, build an electronic metronome, a light dimmer, a voice actuated LED light! Or go back in time and learn all about how radio started by building yourself a Crystal Set radio... or take it one step forward and build an actual radio station!

This Lab is a perfect start to a great new hobby in electronics, whether it's for you, your kids, or your friends. When these came in I took one home to my 13 year old son, and he went wild! Then he built the SWL Radio Kit (SR3, Page 56) and listened to overseas radio broadcasts for the first time. He's now asking me what surface mount technology is all about! (Sure beats him glued to the TV playing video games...)



New For
2007

KIT

**200 New Projects In
A New Super Fun-To-
Use Package!**

It's back and even better! The new 200 in 1 learning lab contains 200 fun and exciting projects to spark the interest in anyone wanting to explore electronics...young or old! The exclusive front panel contains a built-in speaker, earphone, meter, 7-segment LED digital display, two controls and more to make the finished projects fun to use. Now you can build your own AM broadcast station, burglar alarm, telegraph, sound effects, radios, and other interesting circuits that give you hands-on fun when done!

The unique front operating panel and special projects make this the popular choice for entry level learning labs. Requires 6 standard AA batteries, not included.

Super-Fun 200 in 1 Electronics Lab

- ✓ Build 200 very special and super-fun projects!
- ✓ Front panel speaker, meter, controls, and more!
- ✓ No tools required!
- ✓ Comprehensive instruction & theory manual!

Includes the following super-fun learning projects:

Surprise and Game Projects

Wheel of Fortune
The Noisy Light
Electronic Candle
Rain Detector
Ear Splitter
Pencil Lead Organ
The Electric Human
The Electrosonic Human
Electric Birthday Cake
Quick Draw
Quick Draw II
Electronic Safecracking
UFO Invasion
Tug of War
Shot in the Dark
Burglar Alarm
SOS Alert
Target Range
"Catch" the Eight
Marching LEDs
Turn Signal Flasher
Leapin' LEDs!
Lights Out

Back to the Basics

Light Telegraph
Frontier Telegraph
Introducing the Resistor
Parallel Resistors
Secret Resistance
A Variable Resistor
Capacitors in Series and Parallel
The Electronic Gas Tank
Discharge Timer
Light Dimmer
The Quick Capacitor
Electronic Timer
Capacitors and Oscillators
A Variable Capacitor
Resistors and Capacitors Together
Resistors and Capacitors Together II
Meet the Diode
Voltage Drop
Voltage Regulator
LED - A Special Diode
How a Transformer Works
A Chopper Circuit
An AC Simulator
Electronic Buzzer
Photometer
Electronic Jigsaw Puzzle
Night Light
The Light Switch
Electronic Elephant
Capital Letter Displays

Small Letter Displays

Numeric Displays
Meet the Transistor
Transistors as Switches
Electricity from Sound
Electric Money

Electronic "Building Blocks"

A Push-Pull Amplifier
Understanding Oscillators
A Push-Pull Oscillator
An Inverter Circuit
Meet the OR Circuit
Introducing the AND Gate
Using the NOR Gate
Meet the NAND Gate
How a Multivibrator Works
A "One-Shot" Multivibrator
An R-S Flip-Flop

Putting Electronics to Work

Sound Scooper
Liquid Conductivity Tester
Super-Sensitive Photometer
Motion Detector
Two-Tone Buzzer
Variable Capacitor Oscillator
Variable RC Oscillator
Electronic Metronome
Door Alarm
Frequency Shift Oscillator
Code Practice Unit
Light/Sound Code Practice Unit
Strobe Light
Noisy Strobe Light
CdS-Controlled Oscillator
Shot in the Dark II
Does Money Talk?

Radio Circuits

"Crystal Set" Radio
"Funny" Transistor Radio
One Transistor Radio
Spark Gap Transmitter
Morse Code Transmitter
Remote Water Level Detector
AM Broadcaster

Sonic Zoo and Sound Factory

Basic Audio Oscillator
Light-Controlled Bird
Electronic Motorcycle
Chirping Bird
Electronic Siren
Fish Caller
Plant Growth Stimulator

Electronic Organ

Electronic Raindrops
Electronic Cat
Electronic Bird
Digital Rhythm
Sound Machine I
Sound Machine II
Sound Machine III

Electronic Decision-Makers

Electronic Coin Toss
Electronic Coin Toss II
Even or Odd
Electronic Roulette
Electronic Dice
Roulette with Sound
The Light Fantastic
ESP Tester
Close-In

A Trip to Digital Land

Three-Input OR Circuit
Three-Input AND Circuit
RTL Inverter
RTL Buffer
RTL OR Gate
RTL AND Gate
DTL OR Gate
DTL AND Gate
DTL NOR Gate
DTL NAND Gate
DTL Exclusive OR Gate
TTL Inverter
TTL Buffer
TTL OR Gate
TTL AND Gate
TTL 3-Input AND Gate
TTL NOR Gate

More Adventures in Digital Land

TTL XOR Gate
TTL NAND Enable Circuit
TTL AND Enable Circuit
TTL OR Enable Circuit
TTL Line Selector
TTL Data Selector
TTL R-S Flip-Flop
TTL R-S Flip-Flop II
Transistorized Toggle Flip-Flop
NAND Toggle Flip-Flop
J-K Toggle Flip-Flop
TTL Astable Multivibrator
TTL J-K Flip-Flop
TTL D Flip-Flop
TTL Latch Circuit
Shift Register

Circuits That Count

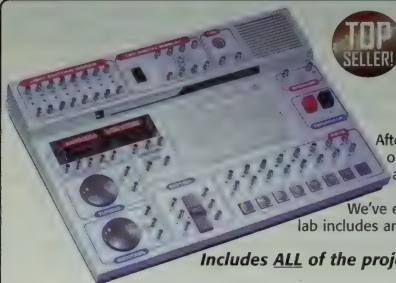
Basic Counter Circuit
Synchronous Counter
Asynchronous Counter
Counter with Line Decoder
Divide by 4 Counter
Divide by 4 Counter with Line Decoder
How a Line Decoder Works
Multiple Counter
Binary Counter with Display
Divide by 3 Counter with Display
Divide by 4 Counter with Display

Some Silly Circuits

Light or Sound
Be Your Own Multivibrator
Anticipation
Big Mouth!
Sound Stop
Multivibrator Switching
Winking LEDs
A Phony Counter?
Alphabet Flasher
A One-Shot TTL
Winking LEDs II
Transistor Timer
TTL Tone Generator
Meet the VCO
Sound Out Timer
Buzzin' LED
Son of Buzzin' LED
Octave Generator
Crossing Signal
Digital Timer
Set / Reset Buzzer I
Set / Reset Buzzer II
Set / Reset Buzzer III
Optical Counter
LED Sound Meter
Shot in the Dark III
Set / Reset Match
Number Displays

Testing and Measuring Circuits

Circuit Continuity Checker
Acoustic Ohmmeter
DC Voltmeter
Voltage Level Detector
AC Voltmeter
Audio Signal Generator
Volume Level Meter
Capacitance Checker
Diode Tester
Transistor Checker


**TOP
SELLER!**
KIT
**300 Projects
Plus Theory!**

Complete 300 in 1 Electronics Lab

- ✓ Build 300 exciting electronic projects
- ✓ Solderless connections for safe assembly
- ✓ No tools required!
- ✓ 165 page comprehensive instruction & theory manual!

After we introduced our PL130 lab kit we were amazed at the customer response. Hundreds and hundreds were ordered, and re-ordered by everyone you could imagine! From parents for their kids, to grandparents for THEIR kids and grandkids, the response has been the same... "THEY LOVE IT!"

We've expanded our line to include this 300 in one lab kit, and the 500 in one lab kit on page 66. Just like the PL130, this lab includes an incredible 165 page comprehensive manual covering the construction of EACH project and the theory behind it.

Includes ALL of the projects in the PL130 PLUS THE FOLLOWING PROJECTS:

Surprise and Fun

Light-Controlled Bird
A Transistor Radio
Sound Scooper
American Patrol Car Siren
Digital Roulette
IC Organ

Back to the Basics

Light Telegraph
Introducing the Resistor
Parallel Resistor
Meet the Diode
The LED - a Special Diode
The Electronic Gas Tank
Meet the Transistor
Transistor as switches
PNP Transistor Switch
NPN Transistor Switch
Delay Light
Night Light
Electronic Timer
Capital Letter Display
Small Letter Display
Number Display

Electronic "Building Blocks"

An Inverter Circuit
Meet the OR Gate
Introducing the AND Gate
Using the NOR Gate
Meet the NAND Gate
How a Multivibrator Works
A "One-Shot" Multivibrator
An R-S Flip Flop
Meet the Oscillator
Changing Oscillation with Capacitor
Changing Oscillation with Foreign Substance
More about Oscillator
A Push-Pull Oscillator

Putting Electronics to Work

CdS Controlled Oscillator
Frequency Shift Oscillator
Motion Detector
Door Alarm
Rapid LED Display Switching
Code Practice Unit
Current Switch
Two-Tone Buzzer
Astable Multivibrator
Monostable Multivibrator
Code Practice Unit
The Noisy Light
Hearing Aid Amplifier
Light/Sound Code Practice Unit
Light-Controlled Burglar Alarm
DC-DC Converter
Count Down Timer
Transistor Frequency Doubler
One Transistor Full-Wave Rectifier

Radio Circuits

"Crystal Set" Radio

"Funny Transistor" Radio
Remote Water Level Detector
IC Radio
Morse Code Transmitter
AM Transmitter
Broadcasting Organ

Sonic Zoo and Sound Factory

Plant Growth Stimulator
Electronic Woodpecker
Fish Caller
Electronic Raindrops
Machine Gun Pulse Detector
Chirping Bird
Electronic Bird
"Horror Movie" Sound Effect
Sound Machine I
Sound Machine II
Multi-Tone Siren
Digital Rhythm
Two-IC Electronic Organ

Electronic Decision-Makers

Majority Logic Gate
Electronic Coin Toss
Electronic Coin Toss II
Electronic Coin Toss III
Even or Odd
Quick Draw Game
Close-In
ESP Tester
The Light Fantastic
Shooting Game
Marching LEDs
Electronic Dice
Electronic Roulette

Operational Amplifier IC Can Do Many Things

Meet the VCO
Silicon Diode Solar Cell
Astable Multivibrator Using OP Amplifier
Pulse Generator
Experiment of Comparator
Comparator with Hysteresis
Constant Current Sources by OP Amplifier
Non-Inverting Adder
Touch Switch Using OP Amplifier
Early Bird
DC-DC Converter by OP Amplifier
Inverting Amplifier
Non-Inverting Amplifier
Differential Amplifier
Differential Output Amplifier
Power Amplifier Using OP Amplifier
Balanced Transformerless Amplifier
Three-Stage Differential Amplifier
VCO Using OP Amplifier

Voltage Controlled Amplifier

V-F Converter
F-V Converter
Sweep Generator
Multiple-Function IC Project
Sound Alarm
Photo Organ
Vibrato Organ

Introducing the Power Amplifier IC

IC Power Amplifier
IC Power Amplifier II
Oscillator Using Power Amplifier IC
CdS Controlled IC Oscillator
Phase Shift Oscillator
Intercom
A Water Service Pipe Sound
Electronic Klaxon
Wide Range Audio Frequency Oscillator

A Trip to Digital Land

Switching Circuit
RTL Inverter
RTL Buffer
RTL OR Gate
RTL AND Gate
Transistor OR Gate
Transistor AND Gate
Transistor XOR Gate
Special NAND Gate
DTL OR Gate
DTL AND Gate
DTL NOR Gate
DTL NAND Gate
DTL Exclusive OR Gate
C-MOS Inverter
C-MOS Buffer
C-MOS OR Gate
C-MOS AND Gate
C-MOS 3-Input AND Gate
C-MOS NOR Gate
C-MOS 4-Input NOR Gate
C-MOS 4-Input NOR Gate II
DeMorgan's Theorem
Experiment of Threshold Voltage
NAND/NOR and Transistor Switch

More Adventures in Digital Land

C-MOS XOR Gate
C-MOS NAND Enable Circuit
C-MOS AND Enable Circuit
C-MOS OR Enable Circuit
A One-Shot NAND Gate
C-MOS Line Selector
C-MOS Data Selector
C-MOS R-S Flip Flop
C-MOS Flip Flop II
Set/Reset Buzzer
Set/Reset Buzzer II
Set/Reset Buzzer III
Transistorized Toggle Flip Flop

NAND Toggle Flip Flop

J-K Toggle Flip Flop
C-MOS Astable Multivibrator
C-MOS J-K Flip Flop
C-MOS D Flip Flop
C-MOS D Flip Flop II
R-S T Flip Flop
T Type Flip Flop
C-MOS Latch
Shift Register
Touch Switch Using NAND Gate
Half Adder
D-Latch
2-Line to 4-Line Decoder
Multiplier
Dual 2-Input Multiplexer
Two-Stage Frequency Divider

Circuits That Count

Basic Counter
Synchronous Counter
Asynchronous Counter
Counter with Line Decoder
Divide by 4 Counter
Divide by 4 Counter with Line Decoder
How a Line Decoder Works
Multiple Counter
Binary Counter with Display
Divide by 3 Counter Display
Divide by 4 Counter Display
Up/Down Counter
Down Counter
Decade Down Counter
Decade Down Counter with Display
Presetable Counter
Hexadecimal Counter
Octal Counter
Random Access Display
Decade Counter
BCD Counter with Display
Octal Counter with Line Decoder
Octal Counter with Display
Decade Counter with Display
Decade Counter with Display II

Getting Closer to Computers

BCD to 7-Segment Decoder
Full Adder
Decimal to Binary Encoder
Binary to BCD
Octal to BCD
Hexadecimal to BCD
3-Bit Shift Register

Amusement in Digital Land

VCO by NOR Gate
Pulse-Delayed Circuit
NAND Gate Tone Generator
Transistor Timer
Noise-Signal Discriminator
Pulse Stretcher
Bidirectional Buffer
Various Inverters

Electronic Switch

Tone Burst Generator
Digital Timer
Digital Timer II
Ten Count Buzzer
Press First
Target Range
Catch the Eight
SOS Alert
Wheel of Fortune
Leapin' LEDs

Shakehands of Analog and Digital

Pulse Number Modulation Light Dimmer
Pulse Width Modulation Light Dimmer
DC-DC Converter Using the C-MOS Oscillator
Absolute Value Amplifier
Window Comparator
Digital Light Dimmer
A-D Converter
D-A Converter
Photometer with Digital Display
Surprise and Fun Revisited
Experiment of Electromagnetic Induction
Electronic Candle
Constant Current Circuit
A Phony Counter
Alphabet Flasher
Winking LEDs II
Delayed Timer II
Crossing Signal
Octave Generator
Sound Out Timer
Sound Stop
Big Mouth!
Light or Sound
Be Your Own Multivibrator
Anticipation
Set/Reset Match

Testing and Measuring Circuits

Circuit Continuity Checker
Acoustic Ohmmeter
Audio Signal Generator
Temperature-Sensitive Audio Amplifier
Water Level Detector
Battery Checker
IC Oscillator/Component Tester
Voltage Drop Alarm
Current Shut-Down Circuit
Logic Checker II
Temperature Alarm
Function Generator

Advanced 500 In 1 Electronics Lab

KIT

**TOP
SELLER!**



- ✓ 152 page starter course manual!
- ✓ 78 page advanced course manual!
- ✓ 140 page programming course manual!
- ✓ Quality hinged case construction

**Advanced Learning Courses Plus 500
Separate Projects!**

We went one step beyond our 300 in one lab kit! Yes, 500 in one, PLUS comprehensive learning course manuals! Build 500 exciting projects, learn schematics, build and learn both analog and digital circuits, and even get into digital programming. 500 projects, 370 pages of comprehensive course manuals, and LOTS OF FUN! (I'd say a lot more... but I don't have the room! WOW, 500 projects!)

**Includes ALL of the projects in the PL130... AND
ALL the projects in the PL300... PLUS
THE FOLLOWING PROJECTS:**

Back to the Basics

Capacitors in Series and Parallel

Electronic "Building Blocks"

Low Distortion Sinewave Oscillator

Putting Electronics to Work

Strobe Light

Electronic Grandfather Clock

Electronic Metronome

Twin-T Audio Oscillator

Current Switch

Shot in the Dark

Variable R-C Oscillator

Two-Tone Buzzer

Sawtooth Wave Oscillator

Radio Circuits

Wireless Code Transmitter

Sonic Zoo and Sound Factory

Two-Tone Patrol Car Siren

Pencil Lead Organ

Electronic Motorcycle

Machine Gun Pulse Detector

Electronic Siren

Electronic Cat

Electronic Organ

Electronic Decision-Makers

Majority Logic Gate

Electronic Coin Toss

Electronic Coin Toss II

Even or Odd

Quick Draw Game

Close-In

ESP Tester

The Light Fantastic

Shooting Game

Merchising LEDs

Electronic Dice

Electronic Roulette

Operational Amplifier IC Can Do

Many Things

Integrating Circuit

Pitch Doubling Circuit

Pitch Doubling Circuit II

Comparator

Schmitt Trigger Circuit

Delayed Timer

Pulse Frequency Doubler

Touch Switch Using OP Amplifier

Surprise and Fun Revisited

Experiment of Electromagnetic Induction

Winking LEDs

Voice Leveler

Buzzin' LED

Son of Buzzin' LED

Testing and Measuring Circuits

Audio Signal Tracer

A Sound of Ripples

Rain Detector

Burglar Alarm

Temperature-Sensitive Audio Amplifier

Learn Basics More

A Basic of Control Volume

Emitter Follower

Basic Operation of Zener Diode

Zener Voltage Checker

Zener Voltage Checker II

Basic Photo-Transistor Operation

Voltage Drop Circuit by Means of

Diodes

Experimentation of Capacitor

Temperature Characteristic

Darlington Circuit (Touch Sensor)

Edge-Trigger Circuit

RC Type Differentiating Circuit

Switch Matrix Circuit

Memory Backup Circuit

Power on Reset Circuit

Constant-Voltage Circuit (Fixed Output)

Constant-Voltage Circuit (Variable Output)

A Rectifier Circuit by Diode Bridge

AGC Circuit Using a Single Transistor

Upper/Lower Limiter Circuit Using OP

Amplifier

Window Comparator II

Amusement on Sound

Multi-Tone Siren

Two-IC Electronic Organ

A Water Service Pipe Sound

Electronic Klaxon

Sound Machine III

Sound Wave Varying with Light

Intensity

Player Organ

Sound of Passing Siren

Light Source Sensing Circuit by Sound

Electronic Piano Circuit

Whistle Generating Circuit

Space Gun

Car Horn

More Radio Circuits

Morse Code Transmitter

Broadcasting Organ

FM Transmitter (FM Wireless

Microphone

To The Game World

Quiz Winner Detector

Reflex Nerve Test Game

Shooting Game II

Shot In The Dark II

Sound Quiz

Stop the Seven

High-Power Switch

"Lookout, Mr. Blackbeard!" Game

Russian Roulette

Movie Hitting Game

"Janken" Game

Ping-Pong Game

More Adventures in OP Amplifier Circuits

Voltage Controlled Amplifier

V-F Converter

F-V Converter

F-V Converter II

White Noise Generator

Sweep Generator

Multiple-Function IC Project

Sound Alarm

A Sound of Ripples

Photo Organ

Vibrato Organ

More About Oscillation

Phase Shift Oscillator

Wide Range Audio Frequency Oscillator

Sawtooth Wave Oscillator II

Three Phase Oscillator

Wien-Bridge Oscillator

Ramp Wave Generator

Digital Sine Wave Generator

Frequency-Variable Sine Wave

Generators

Sine Wave Oscillator Using D-A

Converter

RC Phase-Shift Oscillator

Two Sine Waves with Different Phases

One-Shot Multivibrator Using IC 555

One-Shot Multivibrator Using J-K Flip-Flop

One-Shot Multivibrator Using OP

Amplifier

Shakehands of Analog and Digital

Pulse Number Modulation Light

Dimmer

Pulse Width Modulation Light Dimmer

DC-DC Converter Using the C-MOS

Oscillator

Photometer with Digital Display

Pulse Width Modulation Light Dimmer II

Voltmeter

Getting Closer to Computer

Binary to BCD

Octal to BCD

Hexadecimal to BCD

3-Bit Shift Register

BCD-to-Decimal Decoder

More Digital Circuits

4-Input Data Selector

AND/OR Circuit Using OP Amplifier

XOR Using OP Amplifier

Time Sharing Display of LEDs

LED Lighting-Duty Varying Circuit Using

One-Shot Multivibrator

LED Blinking-Cycle Varying Circuit Using

Astable Multivibrator

LED Static Drive Circuit

LED Dynamic Drive Circuit

Testing LED Display Response

LED Drive by 4 Switches

Flooding LED by Preset Number

Display Timer (1 to 7 Minutes)

Sound Timer

Programmable Timer with Down

Counter

Amusement in Electronic Circuits

Revolving Light

Photo Switch

Door Chime

Visitor Sensing Chime Using Photo-

Transistor

Touch VCO

Sound Tuning Circuit

Crossing-Bell Sound Generator

Turn Indicator

Staircase Light Switching Control Circuit

Pseudo Candle Circuit

Lie Detector

Light Sensing Circuit

Automatic Lighting LED

Sound Sensing LED

Illumination Lamp

Intercom

PIP Sound Interphone

Electronic Volume

Pedestrian Signal

Time Counter

LED Display Counting Up/Down Circuit

An Electronic Pendulum

Staircase Light Switching Control Circuit

II

Light Brightness Control Circuit

Illumination Circuit with 4-LEDs

A Simulated Car Winkers

Testing and Measuring Circuits

Battery Checker

Conductivity Tester

Transistor Checker

Three-Step Water Level Indicator

Tachometer

Battery Checker II

Digital Illuminometer

Software Projects

Light LEDs

Light On/Off LEDs

A Binary Counter-Increment Value by

ADD Instruction

A Binary Counter-Decrement Value by

SUB Instruction

Light LEDs Sequentially with AND

Instruction

Light LEDs Sequentially with OR

Instruction

Turn On and Off LEDs Sequentially with

XOR Instruction

Moving LEDs Light with ROL Instruction

Moving LEDs Light with ROR Instruction

Night Rider's LEDs with ROL/ROR

Instructions (1)

Night Rider's LEDs with ROL/ROR

Instructions (2)

Binary Counter with INC Instruction

Binary Counter with DEC Instruction

Sound Do as Do, Re, Mi

Sound a Series of Musical Scale

Let's Input Data to Program

Hidden Key Triggers Sound and Turns

All LEDs On

Stacked MOV Instructions

Changing Order of LEDs by Switch

A Musical Scale Sound by S1 Key

Arithmetic Addition of Two Binary

Values

Arithmetic Subtraction of Two Binary

Values

Arithmetic Multiplication of Two Binary

Values

Arithmetic Division of Two Binary Values

Displays Number 0 to 9 on 7-Segment

LED (2)

Change Order of Numbers Display on

7-Segment LED (2)

Switches S1-S4 Light Hex Number On 7-

Seg LED

8-Key Organ

Lighting Spade, Diamond, Heart, and

Club on the LEDs Display (Basic)

Lighting Spade/Heart and

Diamond/Club on the LEDs Display

Lighting Spade, Diamond, Heart, and

Club by 1/2 Duty-1/2 Bias Circuit

Lighting Spade/Diamond and

Heart/Club by 1/2 Duty-1/2 Bias Circuit

Lighting Spade/Diamond and

Heart/Club Alternately by 1/2 Duty-1/2

Bias Circuit

Lighting Spade, Diamond, Heart, and

Club by 1/2 Duty-1/2 Bias Circuit

Results of Logical Operations AND,

NAND, OR, and NOR

Results of Logical Operations XOR and

XNOR

Results of Logical Operations

AND with 4-Switch Entry

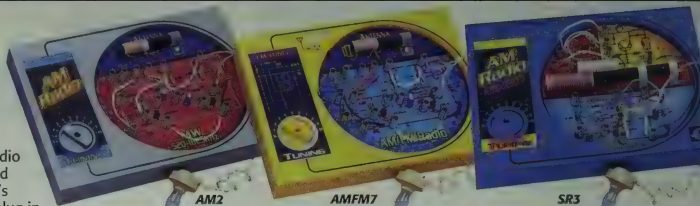
Results of Logical Operations with

OR/NOR 4-Switch Entry

Results of Logical Operations with

AM/FM/SW Radio Learning Kits

- ✓ Learn to build your own AM, AM/FM or SW radio!
- ✓ Discover how radios work!
- ✓ Listen to the results!
- ✓ Safe solderless assembly!



As the "Little Brothers" to our Lab Kits on the previous pages, our Radio Learning Kits teach you the fundamentals of modern radio theory and operation, and give you a working radio when you're finished! There's nothing like the feeling of accomplishment when you finish the kit, plug in the battery, and hear it work! Yes, you did it yourself! Our Radio Kits are available in AM Broadcast, AM/FM Broadcast, and AM Shortwave models. Take your pick! All operate on a standard 9V battery.

AM RADIO

Our AM2 AM Radio kit uses two transistors, 4 resistors and 5 capacitors including a variable capacitor to provide a highly sensitive AM Broadcast Radio. It covers 520 KHz to 1625 KHz and is easy to assemble with safe, solderless connections. The 18 page comprehensive learning and assembly manual covers everything from theory to parts identification and operation.

AM/FM RADIO

Our AMFM7 AM/FM Radio kit is the next step up from our AM2 kit above. It features the same quality AM radio and adds a factory assembled and aligned FM tuner to cover the 88 MHz to 108 MHz FM broadcast band. Utilizes 2 transistors, 5 resistors, 6 capacitors, 1 diode, and 1 coil to provide reception in either band. The AMFM7 is easy to assemble with safe, solderless connections. The 20 page comprehensive learning and assembly manual covers everything from theory to parts identification and operation.

AM SHORTWAVE

Our SR3 Dual Band AM Shortwave Radio Kit takes you away from the local AM/FM broadcasters and brings you into the exciting world of Shortwave Radio Listening (SWL). The preassembled and aligned tuner section adds to the 2 antennas, 4 capacitors, 4 resistors, 1 transistor, and 1 variable capacitor to provide a sensitive Shortwave Radio covering 6 MHz to 8 MHz and 12 MHz to 18 MHz. The SR3 is easy to assemble with safe, solderless connections. The 20 page comprehensive learning and assembly manual covers everything from theory to parts identification and operation. Operates on a standard 9V battery (not included).

AM2	AM Radio Kit With Comprehensive Learning Manual	\$12.99
AM/FM7	AM/FM Radio Kit With Comprehensive Learning Manual	\$14.99
SR3	AM Dual Band Shortwave Radio Kit With Comprehensive Learning Manual	\$14.99



Start With
The Basics!

Entry Level Learning Kits

- ✓ Learn the basics of electronics and electricity!
- ✓ Discover how to listen to AM radio without a battery!
- ✓ Understand and build a working motor!
- ✓ Learn how and why alarm bells work... and build one!

Go back in time and discover how radio was first received! Learn the basics of electric motors including forward and reverse action. And while everyone has heard them, learn exactly how a bell works, and then build one yourself! These beginner kits are ideal for the inquisitive mind that wants to know "how and why it works". No previous experience in electricity or electronics is required, and all kits use safe, solderless connections.

CRYSTAL RADIO SET

The crystal radio was invented in 1901. It is still the basis of modern-day radio and communications equipment and lives on in a wide variety of radio systems. Go back in time, and learn how radio detection was first done! Without a battery or power supply, you will hear AM broadcasts with your Crystal Radio Set! They contain few parts yet teach many concepts. The comprehensive 16 page manual covers everything from how it works to why it works, with illustrated assembly instructions. Assembly is easy with solderless connections, and no previous electronic experience is necessary. Relive history with a Crystal Set today!

MOTOR ACTION KIT

Learn the basics of an electric motor with our MA1 Motor Action Kit. Learn what makes motors spin, how to control forward and reverse in a motor, and then build one that works! Includes a fan blade and a color disk to learn how to mix color with a spinning disk! This is a great kit for the kids and for the beginner to learn just what makes the world go round! Easy assembly with solderless connections. Requires two AA batteries (not included).

BELL ACTION KIT

Ding-a-ling... is that a bell? Yep, we've all heard them, but do you know exactly how they work? Our BA1 Bell Action Kit is a perfect learning kit for the beginner or the curious! Learn what makes an electronic alarm bell ring, explore how electromagnetism is used, and how you can change the ringing characteristics of a bell! This kit is fun and safe, using solderless connections. Requires two AA batteries (not included).

CS2	Crystal Radio Kit	\$9.99
MA1	Motor Action Kit	\$8.99
BA1	Bell Action Kit	\$8.99

WELCOME TO THE WORLD OF SURFACE MOUNT COMPONENTS

Welcome to the latest innovation in electronics: Surface Mount Technology, or SMT. Just as the transistor revolutionized the amount of space required to construct electronic circuits, the advent of surface mount components has further "shrunk" the dimensions of the space needed for modern day circuits. These "chip" components are commonly used in everything from camcorders to high speed computers. They are also used in a number of Ramsey Kits!

While the components may look strange at first (where are the leads?!) rest assured that they are not too difficult to install. You'll want to have some special equipment to solder these parts, nothing fancy or expensive, just things you'll want to have handy before beginning. A small pair of tweezers and good eye to hand coordination are necessary for proper SMT assembly. A magnifying lens is a MUST to check solder connections! And of course, a soldering iron. A friendly warning for you: don't pull out your trusty soldering gun for surface mount projects as the gun generates too much heat for the tiny solder "tabs" on the component ends. A standard pencil type iron will work just fine. SMT parts are also identified differently than standard components so you'll want to familiarize yourself with what's what and who's who in the world of these tiny components. And while you may not be interested in working with them now... you will be forced to at some point since nowadays many manufacturers are making parts only in SMT packages! (Now I'm thinking back at the good old 5U4 vacuum tubes I used to use in kits... quickly replaced with a couple 1N2071 diodes! Wonder if anyone knows what the "getter" is? No it's not the guy you send to get your lunch!)





Practical Soldering Kit

- ✓ Learn soldering and PC boards!
- ✓ Includes practice exercises!
- ✓ Comprehensive training manual

Learn To Solder!



**TOP
SELLER!**

This is a beginner's project specifically designed to teach you the fundamentals of soldering and working with printed circuit boards.

Like any skill, good soldering requires practice as well as an understanding of the principles involved. You will become familiar with PC boards, the how's and why's of soldering, components, component installation, and troubleshooting soldering problems (including solder bridges!) Project runs on a standard 9VDC battery, not included.

SP1A Practical Soldering Kit KIT \$9.95

Practical Solder & Parts Kit

- ✓ Learn soldering, boards, and components!
- ✓ Learn color codes!
- ✓ Comprehensive course and exam included

Learn Soldering & Components!



**TOP
SELLER!**

Not only will you learn soldering and desoldering but you will also learn component identification and color codes.

With 163 solder points, you will learn and practice standard soldering, close tolerance soldering, tack soldering and desoldering. Plus you will learn component identification and complete color codes. Even includes a color code calculator! Also learn voltage and resistance analysis in circuits. Comprehensive manual includes written and visual exams. Project runs on a standard 9VDC battery, not included.

SP3B Practical Soldering & Parts Kit KIT \$9.95

Practical Surface Mount Technology (SMT) Soldering Course

KIT

**TOP
SELLER!**

**Learn & Practice SMT
Component Soldering!**

Surface Mount Technology (SMT) has become a way of life for electronics. Virtually all new high tech products utilize SMT design and components. Even our latest Ramsey kits include various SMT components. There are two problems with SMT: First, the parts are extremely small, at times the size of a pin head! Therefore, you need to have the proper tools, not only to hold them and solder them, but to see them! (Check out the tools section on page 71 for help!) Secondly, unlike "through hole" parts, SMT components are soldered directly on the surface of the PC board (hence the name SMT!) This is an entirely new method of soldering, and it takes practice to get it right. Trust me, I've created a number of solder bridges myself when I first started soldering SMT components!

Taking this course and practicing on the neat little kit will prepare you for the future in electronics. Includes the PC board, all the SMT and other components required, and a comprehensive training course covering all aspects of SMT soldering, desoldering, removing, and component placement. The finished project is a neat little "Decision Maker" that includes 6 flashing SMT LEDs, complete with a professional overlay panel. The finished Decision Maker runs on a standard 9VDC battery, not included. (Hey, I mentioned that I created solder bridges when I first soldered SMT... now I can't even see them without my reading glasses!)

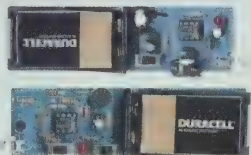
SM200K Practical SMT Soldering Course \$20.95

Practical Fiber Optics Voice & Data Kit

KIT

- ✓ Send voice over fiber optic cable!
- ✓ Includes transmitter, receiver, and fiber optic cable!
- ✓ Learn the theory and exactly how it works!
- ✓ Fiber length can be extended

**Fiber Optics, Used For More
Than Holiday Decorations!**



Have an adventure with Fiber Optics and learn at the same time! At one time fiber optics technology was just used for those cute little holiday trees you see at the stores. Then they realized that fiber can be used for communications and data transmission without the problems and line loss of conventional copper wires. Today fiber networks carry the bulk of the telephone, CATV and broadcast television programs, replacing land lines, microwave, and satellite communications. Just like SMT, fiber optic technology is the wave of the future!

While this project and course will not build you a nationwide fiber communications network, you WILL learn the basics of fiber optics and its use in telecommunications. The learning kit includes a transmitter board, receiver board, fiber optic cable, and a comprehensive learning course. The transmitter converts an audio signal into a light signal. The receiver accepts the light and converts it back into an electrical signal. You will learn how the converted signal is then reshaped into the proper form to be heard.

Fiber optic cable, its protective covering, and connectors to attach the cable to the transmitter and receiver are also included. PC board soldering is required. The transmitter and receivers both utilize a standard 9VDC battery, not included. FQ25 is a great project kit to learn about Fiber Optics (there, I spelled Fiber the way I like it!)

FQ30K Fiber Optics Voice & Data Learning Kit \$20.95
FQ20K Fiber Optic Cable, 1,000µm (sold by the foot) \$8.55/ft

Fiber Optic Lab Kit

- ✓ Learn and experiment with fiber!
- ✓ Includes experiments!
- ✓ Detailed training manual included

Learn By Doing!



Learn all about fiber optics, from its history all the way through applications and uses for fiber with this comprehensive course.

The course includes a 61 page detailed training manual and all the materials and parts necessary to conduct nine stimulating experiments related to fiber optic communications. Will give you a greater understanding of fiber optic techniques by using real fiber optics hardware and parts with hands-on experiments. The lab portion can be used with the included course or as a supplement to an existing course.

FQ40K Fiber Optic Lab Kit KIT \$64.95

Fiber Splice Kit

- ✓ Mend and splice fiber!
- ✓ For 1,000µm fiber

Everything You Need!



This fiber splice kit takes the mystery out of splicing fiber optic cable! Contains the materials needed for mending and extending standard 1,000µm plastic fiber optic cable for the fiber projects above as well as any other fiber optic cable using standard 1,000µm fiber optic cable.

Contains all the necessary sleeves and retention clips and cable to complete 10 splices. No tools required. Also includes detailed instructions and learning manual.

TK25 Fiber Optic Splice Kit KIT \$12.95




Learn AM and AM/FM Radios With Integrated Circuits!

Makes an excellent project for classroom studies, science fairs, home study!

The unique design of these kits allows you to place the part over its corresponding symbol in the schematic drawing on the surface of the PC board during assembly. This technique maximizes the learning process while keeping the chance of an assembly error at a minimum. They also feature the latest IC design technology to bring you up to speed with today's technology. These specific kits are available in both AM and AM/FM radios.

Both kits include an assembly, lesson, and theory of operation manual. The actual assembly is broken into simple sections. Each section is designed to be completely tested before moving on to the next; this reduces difficult troubleshooting associated with many similar kits. Both kits include hi-tech blue PC boards with the schematic printed on the top surface. The manuals are easy to understand without any previous electronics experience.

Each radio PC board has been designed so that no cabinet or enclosure is necessary. A special molded plastic base provides the necessary support to use the radio in any location, properly displaying the work achievement of the student or builder!



KIT

TOP SELLER!

Learn & Build A Superhet IC Based AM/FM Radio Receiver!

AM/FM Integrated Circuit Radio & Training Course

- ✓ Learn all about AM/FM radio design & theory!
- ✓ Build a high performance radio with an IC!
- ✓ Step-by-step assembly and test procedures
- ✓ Great for student projects

This Superhet 108 AM/FM Radio Kit is a "superheterodyne" receiver of the standard AM (amplitude modulation) and FM (frequency modulation) broadcast frequencies. The unique design of the Superhet 108 includes an integrated circuit (IC), 9 transistors, 4 diodes, and other related resistors, capacitors, coils, and misc. parts. Because good soldering practices are important, a soldering guide is also provided as well as a component color code and pictorial identification chart.

The actual assembly is broken down into 9 sections. The theory of operation for each section, or stage, should be read before the assembly is started. This will provide the student with an understanding of what that stage has been designed to accomplish, and how it actually works. After each assembly you will be instructed to make certain tests and measurements to prove that each section is functioning properly. If a test fails to produce the proper results a troubleshooting guide is provided to help you correct the problem. After all of the stages have been built and tested a final alignment procedure is provided to peak the performance of the receiver and maximize the Superhet 108's reception capabilities. Runs on a standard 9VDC battery, not included. From Elenco.

AMFM108K

AM/FM Integrated Circuit Radio Kit And Training Course


\$34.95

AM Integrated Circuit Radio & Training Course

- ✓ Learn all about AM radio theory and circuits!
- ✓ Build an IC based AM radio with great reception!
- ✓ Step-by-step assembly and test procedures
- ✓ Great IC starter kit for students young and old

KIT

AM Radio, Learn How It Works, And Build One Too!



This Superhet AM550 AM Radio Kit is a "superheterodyne" receiver of the standard AM (amplitude modulation) broadcast frequencies. Unlike the typical "cheap" AM radio kit, the AM550 features an integrated circuit design to bring you into today's technology of radio receivers. The high quality design includes a built-in integrated circuit (IC), 3 transistors, one diode, as well as resistors, capacitors, coils. The unique design of the Superhet 108 includes an integral integrated circuit (IC), 9 transistors, 4 diodes, and other related resistors, capacitors, coils, misc. parts and customer designed hardware. Before you even start building, construction techniques and soldering practices are illustrated and covered in detail. In addition a comprehensive parts list complete with a color code card is provided for rapid identification of all discrete parts.

The training course and assembly are broken down into 5 distinctive sections, allowing you to learn, build, and troubleshoot each section before advancing to the next section. Like the AM/FM unit above, after each section you will be instructed to make certain tests and measurements to prove that each section is functioning properly. If a test fails to produce the proper results, a troubleshooting guide is provided to help you correct the problem. After all of the stages have been built and tested, a final alignment procedure is provided to peak the performance of the receiver and maximize the AM550's superb reception. Runs on a standard 9VDC battery, not included. From Elenco.

AM550K

AM Integrated Circuit Radio Kit & Training Course

\$22.95

Integrated Circuit (IC)



Function: noun

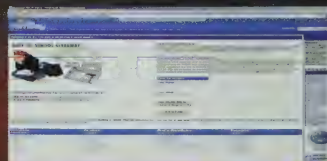
A tiny complex of electronic components and their connections that is produced in or on a small slice of material such as silicon. (More from the "need to know" department here at Ramsey!)

WIN!
Monthly!

OUR 4TH YEAR OF GIVEAWAYS!

Register with your E-Mail address to win MONTHLY drawings for equipment valued up to \$300 and more! Each month we award a value package to one lucky person!

Next month...
IT COULD BE YOU!



www.ramseykits.com/win



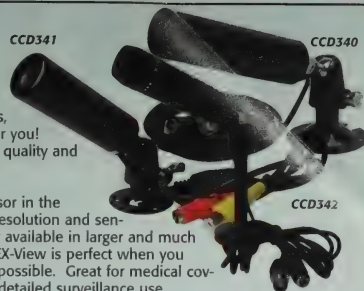
High-Res Weatherproof "Lipstick" Cameras

- ✓ Three models: color Super EX-View, B&W hi-res, or B&W Super-HAD
- ✓ Small lipstick design
- ✓ Universal swivel mounting bracket
- ✓ Weatherproof, suitable for outdoor use!
- ✓ Simple plug-in connections

Welcome To The Super Resolution Department!

Looking for the highest quality "lipstick" or "bullet" cameras, but don't want to pay a fortune? These are the cameras for you! All feature Sony manufactured CCD sensors for the highest quality and reliability.

Wired & Tested



SPECIFICATIONS

	CCD340	CCD341	CCD342
Format:	NTSC Color	EIA B&W	EIA B&W
Pick-up element:	Sony 1/3" EX-View	Sony 1/3"	Sony 1/3" HAD
Number of pixels:	768x494	512x492	768-494
Resolution:	480 TV lines	420 TV lines	600 TV lines
Min. Illumination:	0.05 Lux	0.1 Lux	0.2 Lux
S/N ratio:	>50dB (AGC off)	>46dB (AGC off)	>48dB (AGC off)
Electronic shutter:	1/60 - 1/100,000	1/60 - 1/100,000	1/60 - 1/100,000
Impedance: 75 ohm	75 ohm	75 ohm	75 ohm
Lens:	3.6mm	3.6mm	3.6mm
Connectors:	BNC/Power	BNC/Power	BNC/Power
Power:	DC 12V/130mA	DC 12V/120mA	DC 12V/120mA
Dimensions:	3" L x 0.8" H	3" L x 0.8" H	3" L x 0.8" H

A Sony EX-View color CCD sensor in the CCD340 provides the highest resolution and sensitivity available. Formerly only available in larger and much more expensive cameras, the EX-View is perfect when you want the finest picture quality possible. Great for medical coverage, precision inspection, or detailed surveillance use.

The standard B&W sensor in the CCD341 provides an above-average 420 lines of resolution. This is great for general purpose use and actually exceeds the resolution of the typical low cost black & white surveillance camera.

The CCD342 is a super-high resolution Black & White camera designed with a Sony CCD Super HAD sensor that provides 600 TV lines of resolution. This is perfect where exacting fine detail is required and color is not necessary. Yes, we said 600 lines!

All cameras feature a waterproof housing and a universal swivel mount. Video is brought out to a BNC female and power is brought out to a standard 2.1mm female connector. If you're looking for high quality and performance but don't want to pay a fortune, these are for you!

CCD340	Color Super Hi-Res Lipstick Camera, EX-View CCD Sensor	\$189.95
CCD341	B&W Hi-Res Lipstick Camera, Sony CCD Sensor	\$69.95
CCD342	B&W Hi-Res Lipstick Camera, Sony Super-HAD Sensor	\$99.95
AC125	110VAC Power Supply	\$9.95

CCD308



TOP SELLER!

Waterproof Color & B&W Bullet Cameras with Built-In IR Illumination!

Yes...We said COLOR Plus Automatic IR Illumination!

Talk about the best of both worlds! High quality COLOR video camera, PLUS nighttime B&W video camera, PLUS built-in high output IR Illumination, PLUS auto mode switching... all in one unit!

You've seen bullet cameras before, but never like this. Yes, it's a high quality color CCD camera during the day, but once the light level falls below minimum requirements it automatically changes to an IR B&W camera, and turns on the built-in TEN IR illuminating LED's to see in the dark! Now you don't have to sacrifice color operation because you need total darkness coverage at night. You can have both, in one camera! That's not all! Just look at the case. Jet black solid aluminum case that's WATERPROOF to IP57 standards! Yes, that includes temporary complete immersion in water! All angle, built-in swivel mount provides you with any mounting configuration you may need. Connections are simple. No solder connections needed; the waterproof cable terminates video with a professional BNC female connector, and provides a standard 2.1mm DC power connector. Simply plug it in!

- ✓ Day & night monitoring! CCD color image automatically changed into B/W image in the dark!
- ✓ High output built-in IR illumination for B&W nighttime use
- ✓ Weatherproof black anodized aluminum housing for outdoor use
- ✓ Fool-proof interfaces...BNC video & power

SPECIFICATIONS

	CCD308	CCD309
Pick-up element:	1/4"	1/4"
Number of pixels:	512 x 492	512 x 492
Resolution:	350 TV lines	350 TV lines
Min. illumination:	0.0 Lux	0.0 Lux
S/N ratio:	46dB	46dB
Electronic shutter:	1/60 to 1/100,000	1/60 to 1/100,000
Load Impedance:	75 ohm	75 ohm
Standard board lens:	3.6mm, F2.0	3.6mm, F2.0
Power:	DC 12V 150mA	DC 12V 180mA
Dimensions:	2.0" W x 3.2" L	2.0" W x 3.2" L

Wired & Tested

only gets better... Take the same camera and with a mere switch closure get 2X digital zoom! That's right, our CCD321 also includes 2X digital zoom, and we even provide a high quality pushbutton switch for it! You'll be amazed; set up the camera for your wide angle view and with a flip of the switch you have 2X! And you do that at the cable end, not at the camera! Don't need color but want the same high-end housing and built-in IR Illumination in a Hi Resolution B&W unit? No problem, use the CCD308 (I set one of these up for our webcam, pushed the button, and saw one of our people sleeping at the bench...and it wasn't even Friday..or Monday!)

CCD309	Waterproof Color Bullet Camera with Built-in Auto Switching IR Illumination	\$169.95
CCD308	Waterproof B&W Bullet Camera with Built-in Auto Switching IR Illumination	\$109.95
CCD321	Waterproof Color Bullet Camera with Built-in Auto Switching IR Illumination, 2X Remote Zoom	\$239.95
AC125	110VAC Power Supply	\$9.95

VHF TV Transmitter

- ✓ Transmits on Channel 2-6
- ✓ Broadcast your VCR throughout your house
- ✓ Learn while building!

Learn How A TV Transmitter Works!

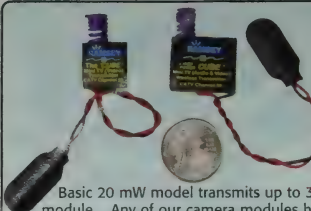
this great little kit allows you to send any audio and video source (like a VCR or TV camera) to any TV set for up to 300 feet. Have your own TV station with YOU playing producer and YOUR selection of programming! And, the nice feature of this kit is that you'll learn just how a TV transmitter works; we explain every part of the circuit from A to Z.

unable to any TV channel 2 - 6, runs on 12 VDC, and accepts standard audio and video signals. Includes an attractive custom case for a finished look!

TV6C	VHF TV Transmitter Kit With Case	\$39.95
AC125	110VAC Power Supply	\$9.95

TOP SELLER!





Wired & Tested

The Cubes! World's Smallest Video Transmitters

The Size Of A Quarter?
You Bet!

- ✓ Crystal clear transmission
- ✓ Transmits on CATV channel 59
- ✓ Ultra small for ANY application!

Perfect video transmission from a transmitter you can hide under a quarter and only as thick as a stack of four pennies! Transmits color or B&W with fantastic quality - almost like a direct wire connection to any TV tuned to cable channel 59. Crystal controlled for no frequency drift with performance that equals law enforcement models that cost hundreds more!

Basic 20 mW model transmits up to 300' while the high power 100 mW unit goes up to 1/8 mile. Units run on 9 volts and hook up easily to most any CCD camera module. Any of our camera modules have been tested to mate perfectly with the Cubes and work great with solid, trouble-free operation! Fully assembled and tested. just hook-up power and you're on-the-air with a killer system! (These new quarters are getting uglier each year & take bad pictures!)

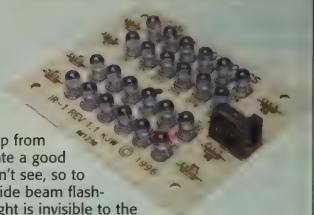
C2000
C2001Cube Video Transmitter, Factory Assembled & Tested
High Power Cube Video Transmitter, Factory Assembled & Tested\$49.9
\$79.9

Infrared (IR) Camera Illuminator

- ✓ Allows you to "See In The Dark"!
- ✓ Amazing illumination!
- ✓ Works with B&W CCD camera
- ✓ Operates on 12VDC

Don't Let Darkness
Dim Your View!

KIT



Imagine being able to see in total darkness! Well, while you can't, virtually any black & white CCD camera can... with a little help from some invisible infrared light! It's easy with our IR1 Infrared Illuminator! A huge array of 24 high intensity infrared LEDs illuminate a good size area so the camera "thinks" it's daylight! There's nothing magical about it; CCD sensors are sensitive to IR light that you can't see, so to the camera the area seems lit perfectly! The illumination provided is about the same as you would expect from a very bright wide beam flashlight. The illuminator runs on 12-15VDC and is built on a convenient PCB ready to install wherever you need it. Because the light is invisible to the human eye, the kit will not be detected, and can be easily disguised! Order our AC125 power adapter for a simple plug-in connection.

IR1
AC125IR Illuminator Kit
110VAC Power Supply\$29.9
\$9.9Don't Miss A Beat...
Watch 4 Cameras At Once!

Automatic Sequential Video Switcher

- ✓ Automatic switching of 4 video sources
- ✓ Variable speed
- ✓ Manual camera selection

Now you can monitor up to four video cameras or other video sources on one video monitor. The AVS10 will automatically sequentially switch between inputs one through four, and display the output on a video monitor. Perfect for multiple video camera installations, stores, household surveillance systems, and more. Has (4) RCA inputs for video input, and one RCA output connector, so you can use standard consumer video cables. Variable front panel timing control allows you to change the viewing time for each sequential view. Change it from fast to slow depending on your requirements! If you see a view you need to study you can manually select that input for constant monitoring. Case measures 5"W x 1 1/2"H x 5 1/4"D. (If you don't want to build it, see below for Quad split units!)

AVS10C
AC125Automatic Video Sequencer Kit With Case
110VAC Power Supply\$44.9
\$9.9

Miniature Real Time Quad Processor/Switcher

Wired & Tested

- ✓ Full motion quad display!
- ✓ Automatic sequential switching!
- ✓ Professional quality at a bargain price!
- ✓ PIP screen mode!
- ✓ Flicker-free freeze function!
- ✓ Selectable zoom function
- ✓ Title overlay generator
- ✓ Multiple alarms
- ✓ RS232 remote control

Full Motion Color Quad
Display & SwitchingTOP
SELLER!

This color, professional quad processor/switcher really amazed us! It's simple to set up, but has all the power and features you'd expect from units costing hundreds more. Plug in up to four color cameras or video sources, and watch them displayed in FULL MOTION, in color, on one screen! Not sure which camera is which? No problem! Camera ID text generators name each camera view, plus the time and alarm or motion message!

Want more? Has one touch freeze frame of any of the inputs, auto freeze and alarm at loss of signal, on-screen user menu provides all setup, ID generator, level and format functions. Plus independent time settings, 8 characters per channel with 3 character colors based on 16 million true colors, built-in bar generator for monitor setup, and VCR in to support 2x2 Zoom-in and freeze function for playback. It doesn't get much better than that! Sure it does! How about RS232 remote control and alarm modes for video loss and motion detecting with a 60 event report and built-in buzzer alarm! Not enough you say? How about a miniature IR remote control... it's also included!

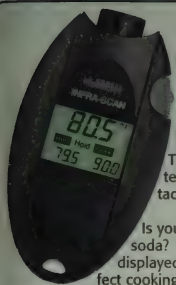
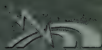
Manual pushbutton full screen selection of any input, quad display, or sequential display are all controlled from the front panel. All setup functions and status is displayed on the on-screen graphical user interface! Each input has separate video adjustments to set levels for a perfect view. Motion detection includes adjustable sensitivity and area masking to create an absolute zone of protection.

All video connections feature professional BNC connections and include camera 1-4 input, VCR input, VCR output, and monitor output. The quad processor runs on 12-15VDC at 1A. Order our AC125 power supply. All of this in a package that measures a mere 6.5" x 5" x 1.2"! If you're looking for a great

CCDS511

Professional Color Quad/Sequential Switcher

\$269.9



Ready, Aim... And Measure!

This beauty is one of the neatest thermometers we've ever seen! You can measure the temperature of anything merely by pointing an IR beam of light at it! That's right, no contact, no sensors, no wires, glass, nothing but a beam of IR light!

Is your motor running hot? Is your refrigerator cold enough? How cold is that bottle of soda? If you want to know, just aim and push the button. The temperature is immediately displayed on the backlit LCD display! Check the temperature of your oven and stovetop for perfect cooking results!

The last measurement is automatically held and stored until power-off. Measurements can be momentary or continuous, with minimum and maximum temps held during measurement! You can't ask for much more than that in a handheld thermometer that is contact-free besides!

How does it work, you ask? Well if you really want to know, here goes: When making a temperature measurement the surface radiation of the object to be measured is evaluated using the principle of radiation thermometry. This is a purely passive process, i.e. no radiation is transmitted. But instead only the natural electromagnetic radiation energy (heat radiation) that every body above a temperature of absolute zero (-273 °C) has, is used. The temperature can be determined very accurately from this radiation energy if the emission factor of the object being measured is known. We'll stop there, because we only have so much space for all this copy!

Runs on 4 LR44 cells (included) for a long life. If you want to know what the temperature is, check it out with the IR101! *(The bartender didn't care when I told him my "ice cold beer" was 47.3° so I showed him...he still didn't care, he just wanted my money!)*

IR101

Infra-Red Thermometer

\$49.95

Wired & Tested

Infra-Red Thermometer

- ✓ Easy contact-free temperature measurement
- ✓ Momentary or continuous measurement
- ✓ Last measurement data hold/display
- ✓ Continuous capture of min/max values
- ✓ Large backlit LCD display

SPECIFICATIONS

Range:	-5°F to 575°F
Resolution:	0.1°F
Accuracy:	±4°F
Units:	°F or °C
Dist to measurement spot:	6:1
Ambient temp range:	32°F to 104°F
Emission factor:	0.95
Power supply:	4 x LR44 cells
Battery life:	2000 measurements approx.
Dimensions:	2.25" x 1" x 4"

Handheld Wind Speed Anemometer

- ✓ Displays instantaneous wind speed!
- ✓ Stores and records max gusts and averages!
- ✓ Displays temperature and wind chill!

SPECIFICATIONS

- ✓ Displays wind speed in mph, km/h, m/s, and knots
- ✓ Wind speed range: 0.44 to 670 mph
- ✓ Wind speed resolution: 0.1 for all units of measure
- ✓ Temperature range: -21.8 to 138.2 °F (-29.9 to 59 °C)
- ✓ Temperature resolution: 0.2°F (0.1°C)
- ✓ Records and displays max and average wind speed since power up
- ✓ Beaufort scale bar graph, 0-12
- ✓ Wind chill display in °F or °C
- ✓ Backlight with auto off
- ✓ Battery saving auto off
- ✓ Neck band for easy carrying and security
- ✓ Weather resistant case
- ✓ Runs on one CR2032 lithium button cell for 12 months life
- ✓ Measures 7" x 4" x 1.63"

We have all seen them on TV... the professional weather talent (now known as meteorologists!) standing in the middle of the hurricane report holding up their wind meter clocking the fastest wind gusts. Usually that's just before they get blown to the ground along with their producer and camera crew! Well now you can have the same professional wind speed meter on a hobbyist budget!

This meter goes beyond just displaying the current wind speed! Besides displaying the real-time instantaneous wind speed in your choice of MPH, KM/H, M/S, or Knots, it also stores and records the maximum gust AND average since it was powered up! In addition, realtime wind speed is also displayed on a Beaufort wind scale ranging between 0 and 12.

Like the wind speed, realtime temperature is also displayed in your choice of °F or °C. Plus, as a derivative of wind speed and realtime temperature, wind chill is calculated and also displayed in your choice of °F or °C.

For your convenience the anemometer is housed in a rugged, weather resistant housing and includes a neck strap for easy carrying. The built-in battery saving circuit keeps the anemometer running for nearly a year with a single lithium button cell! Whether in the middle of a storm, on your boat, hiking, or just curious, if you're looking for the most convenient method of measuring the wind and temperature out in the field, the EA3010 is your answer.

EA3010

Handheld Wind Speed Anemometer

\$49.95

Wired & Tested



**No More Guessing...
KNOW The Wind Speed!**

Wired & Tested

**Wireless Controls, Great For
Holiday Lighting Displays!**



Universal remote control doesn't get much easier than this! Plug the remote outlet in the wall. Plug the device into the remote outlet. Control the device with the RF remote control! Like I said, it simply doesn't get much easier than that!

The system operates with RF at 433 MHz so it doesn't have to have "line of sight" like IR controls. Plus the remote has 4 selectable channels to control 4 separate functions. Each function can be from one to an unlimited number of remote outlets! The functions are coded into the remote with a 4-digit security code! Separate on and off buttons are provided for each channel. Plus, there is a master on/off that turns off ALL channels!

RF Remote Control System

- ✓ Uses 433 MHz RF for wireless control!
- ✓ 4 channel remote controls multiple remotes!
- ✓ Master on/off controls all channels

SPECIFICATIONS

Operating voltage:	120V ~ (60Hz)
Maximum current:	30 amps
Maximum power:	3600 watts
Frequency:	433 MHz
Operational range:	80 feet approx.
Remote functions:	4 numbered keys, on/off
Security code:	4-digit
Remote power:	2 x AA batteries

The system comes with one 4-channel remote and two remote outlets. There are a variety of programming options. One remote can control a number of outlets, multiple remotes can control the same outlets, or you can have any combination using 4 channels! Outlets are rated for indoor use. *(I use these for my holiday lights; it was a lot easier than finding the plugs each night!)*

ES204

RF Remote Control Outlet System

\$39.95

**High Power LED Key Lights**

- ✓ Lifetime warranty
- ✓ Replaceable batteries
- ✓ Brighter than bright!

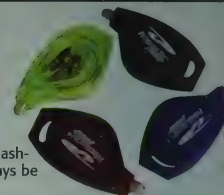
SPECIFICATIONS

Lamp:	High power LED
Batteries:	(2) Lithium cells (included)
Battery life:	12-14 hours
Beam angle:	20°
Weight:	7 grams with batteries

Wired & Tested

**The Highest Quality Security Light...
With You ALL The Time!**

The ultimate in convenience and safety! These tiny bright LED lights are smaller than a quarter, but brighter than most full size flashlights! Small enough for your key chain, these lights are great for dark parking lots, hallways, and anywhere you could use a superbright flashlight, but without the hassle of carrying one. With one of these on your key ring you'll always be able to see!

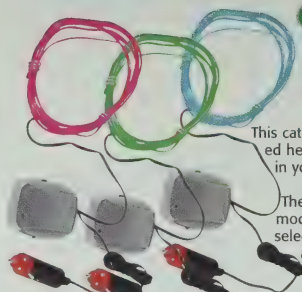
**TOP
SELLER!**

Unlike the imported cheapies out there that you see in stores, these feature replaceable batteries, super-bright LEDs, have a super penetrating beam of light, red for a subtle but bright illumination, and green for a soft, overall illumination. (They also blind my boss when I flash the blue ones in his eyes... Blinded by the light, let's all sing!)

P1	Ultra Bright Keychain Light, White	\$9.99
P2	Ultra Bright Keychain Light, Green	\$9.99
P3	Ultra Bright Keychain Light, Red	\$9.99
P4	Ultra Bright Keychain Light, Blue	\$9.99

Wired & Tested

**Watch The Music...
With Electroluminescence!**



This category in the catalog is Neat Stuff, and I don't think anything is more deserving of being included here than these colored EL (Electroluminescent) wire sets! What you get is 9.8' of .13" EL wire in your choice of red, green, or blue. But that's just the beginning!

The EL wire is connected into a miniature (2" x 3" x 1") EL wire converter. Three switch selected modes on the inverter are FULL, MUSIC, and OFF. A continuous EL illumination is provided when selected to FULL. In the MUSIC mode, a built-in microphone picks up music from your car stereo and modulates the EL wire with the rhythm and beat of the music! There is even a slide control for sensitivity.

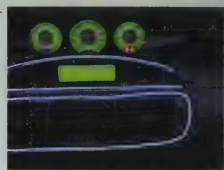
Designed for vehicle use, a standard 12V cigarette lighter plug is provided. Just plug it in, turn it on, and you're all set to "see" the music... nearly 10' of it! The thin design of the EL wire as well as the connecting wire make it easy to custom install it anywhere in your vehicle.

Whether you're wrapping your dashboard, headliner, or console, it's a breeze with the EL wire set!

NWRR30	Sound Activated EL Illumination Set, Red	\$27.99
NWRRG30	Sound Activated EL Illumination Set, Green	\$27.99
NWRRB30	Sound Activated EL Illumination Set, Blue	\$27.99

Sound Activated EL Illumination Wire Set

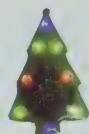
- ✓ Sound activated electroluminescent wire!
- ✓ Flashes to the rhythm of the music!
- ✓ Built-in microphone
- ✓ Adjustable sensitivity

**LED Flashing Christmas Tree Pin**

- ✓ Use it as a pin or pennant!
- ✓ 2 blue LEDs, 4 yellow LEDs, 2 red LEDs
- ✓ Magnetic or pin attachment

Take Your Tree With You!

Get in the holiday spirit with this bright flashing LED Christmas tree! With 8 bright flashing LEDs (2 blue, 2 red, 4 yellow) this pin will light up your holidays. Wear it on your clothes or use the built-in magnet to mount it anywhere! Runs on two standard CR927 button cells. Factory assembled and ready to wear for the holidays! From Velleman. (Kids love to wear these!)

**LFB9 LED Flashing Heart Pin****Wired & Tested \$2.95****LED Flashing Heart Pin**

- ✓ Use it as a pin or pennant!
- ✓ 2 brilliant blue LEDs, 3 red LEDs
- ✓ Magnetic or pin attachment

Share The Love!

This .9" heart-shaped pin is sure to be an attention getter. 5 bright LEDs (2 blue, 3 red) flash brightly, guaranteed to elicit interest from anyone (or anything) attracted to shiny objects! Factory assembled and tested and ready to pin on your shirt or jacket!

Runs on two standard CR927 button cells. Show everyone how you feel about that special person in your life with this lively pin! From Velleman.

LFB3 LED Flashing Heart Pin**Wired & Tested \$2.95****LED Flickering Tea Lights****Wired & Tested**

- ✓ Simulates a flickering candle!
- ✓ Set of two!

Sit Back, Relax!

These little lights simulate the pleasing effect of a flickering candle, but without the smoke, flame, or hot candle wax on your fingers! They are powered by one Lithium 2032 button cell that's included with the lights. Measure 1.42" x 1.18". Assembled and ready to go. From Velleman. (Recommended for indoor use, not because of the wind outdoors, but because you won't see them in bright sunlight!)

**XMCL3 LED Flickering Tea Light, Factory Assembled****\$2.99****LED Flashing Dolphin Pin**

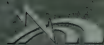
- ✓ It just makes you look... happy!
- ✓ 2 brilliant blue LEDs, 3 red LEDs
- ✓ Magnetic or pin attachment

They Call Him Flipper!

This little guy will bring out the "happy" in both you and everyone that sees it flash on you! How can anyone resist a red and blue flashing colorful dolphin. He contains two blue and three red LEDs and can be pin or magnet mounted. You will be amazed at the comments you'll receive!

Runs on two standard CR927 button cells. Factory assembled and ready to go. From Velleman. (I have that Flipper song stuck in my mind now!)

LFB8 LED Flashing Dolphin Pin**Wired & Tested \$2.99**



Audio/RF DDS Signal Generator

- ✓ DDS and SMT technology!
- ✓ Frequency range 0 Hz to 5 MHz with 0.1Hz resolution!
- ✓ 0 to 10V peak to peak output level
- ✓ Sine, Square, or Triangle waveform output!
- ✓ Non-volatile memory
- ✓ Factory assembled and tested

Wired & Tested



DC To 5 MHz... In 0.1 Hz Steps!

SPECIFICATIONS

Frequency Range:	0.0 Hz to 5 MHz
Frequency Resolution:	0.1 Hz
Stability:	±15 ppm
Output Amplitude:	0 to 10 Vp-p
Amplitude Resolution:	10 mV
Amplitude Accuracy:	±0.1 dB from 0 to 3 MHz ±0.1 to -1.5 dB from 3 to 5 MHz
Output Waveforms:	Sine, Square, Triangle
Output Impedance:	50 ohm, 25 ohm, 0 ohm (current limited) internally selectable
DC Offset:	0.0 V to 5.0 VDC
Offset Resolution:	10 mV
Display:	High contrast LCD
Entry Method:	Direct entry numeric keypad, incremental rotary encoder
Memory:	6 non-volatile memory locations
Power Requirements:	8 to 16 VDC @ 600mA max. 110VAC power adapter included
Dimensions:	9.625" W x 3.625" H x 5.875" D 244.4mm W x 92mm H x 149.2 mm D

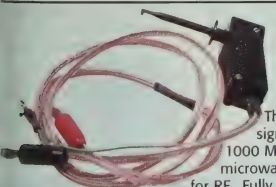
or 0 ohms impedance at the output jacks. With a 50 ohm output impedance a 50 ohm load will drop the output signal level by 1/2 of the value entered. With 0 ohms a 50 ohm load will not drop the level at all. The 25 ohm output setting can help when driving a capacitive load; the 0 ohm setting should never be used with this type of load.

A DC offset may be entered; this is added (or subtracted if the jack connections are reversed) to the AC signal. Rather than the output AC waveform being centered on 0VDC, a set DC voltage can be added to your signal. This allows the performance of tests that are not possible with a basic audio signal generator. For example, a small circuit can be powered by the DC offset as long as it requires less than 2.5W of power, and AC signals can be used to check for noise or EMI immunity. The DC offset can also be used to recreate digital signals in the square wave mode. For example, to create TTL square waves, enter 5V for the level, and 2.5V for the offset. This will create the 5V (digital '1') and the 0V (digital '0') levels needed for testing and clocking digital circuits. With a signal range of up to 10V peak to peak and 5V of offset, even old 4000 series CMOS signal levels can be recreated!

Additionally the SG560 contains 6 non-volatile memories which save the full system settings: frequency, level, shape, and offset. This allows you to frequency hop or use the memories to "script" repair, testing, and alignment procedures. Surface mount technology is used throughout the SG560 making it extremely reliable and accurate. Frequency is entered directly on the sealed membrane keyboard and adjusted with a precision rotary encoder with an oversized knob. Both frequency and output level are displayed on a high contrast, two-line LCD display. The SG560 operates on 8 to 16VDC and includes a standard 110VAC power adapter. Because of the surface mount design the SG560 is only available factory wired and tested. If you are looking for a lab quality signal generator at a super price, the new generation SG560 fits the bill... and a whole lot more!

SG560WT Audio/RF Signal Generator, Factory Assembled & Tested

\$329.95



Measure RF With A Standard VOM!

Wired & Tested

Sniff-It RF Detector Probe

- ✓ Use with any DMM or VOM to measure RF!
- ✓ Low cost RF measurement
- ✓ Can also be used as a field strength meter!

The RF1 is a very sensitive RF detector probe that connects to any digital multimeter and provides a DC voltage output from weak RF signals. This allows very easy tracing of low level RF signals that a counter can't pick up. Wide frequency coverage of 100 kHz to over 1000 MHz lets you track down most any problem in transmitter chains, receiver stages, or even complex PLLs. Uses exotic, low barrier microwave detector diodes to give exceptional sensitivity which can see signals down to microwatt levels! A great low cost way of checking for RF. Fully assembled and tested, and includes standard banana plugs for use with any standard VOM, DMM or voltmeter. If you need to measure RF and don't want to spend big bucks, here you go!!

RF1 RF Sniff-It Probe, Assembled & Tested

\$22.95

Broadband Preamp

- ✓ Broadband...from 1 MHz to 1000 MHz, usable to 2000 MHz!
- ✓ Low noise figure, < 2.5dB
- ✓ Improves AM, FM, VHF TV, UHF TV, and HF reception. 50 - 75 ohm imp.
- ✓ Over 25 dB Gain with up to 100 mW of power output!



Wired & Tested

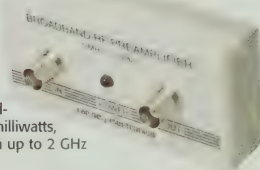
Broadband, Low Noise... And 25dB Gain!

Ever wish you could "perk-up" your counter or scanner to read weak signals? Or how about boosting that cable TV run to drive sets throughout the house or maybe preamplifying that TV antenna to bring in that blacked out football game from a distant city? The PR2 broadband preamp is the answer to all these needs as well as many others! Since the PR2 has such a high compression point of almost 100 milliwatts, you can even use it to boost the power of small, micro transmitters! Microwave MMIC chips from NEC Japan enable the PR2 to have gain up to 2 GHz although we only spec the PR2 to 1 GHz. Runs on 12 VAC/DC or 120 VAC using the included wall adapter. Size: 4" x 2" x 1".

PR2

Broadband Preamp, Factory Assembled & Tested

\$69.95

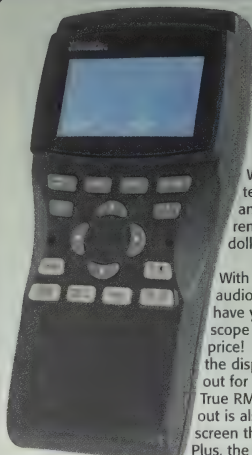




Wired & Tested

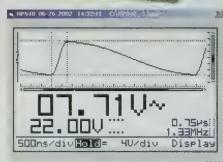
Your Own Personal
Handheld Scope!

- ✓ Digital waveform & measurement display!
- ✓ 10 MHz & 40 MHz sample rates
- ✓ Backlit LCD display
- ✓ RS232 output (40 MHz model only)
- ✓ Charger and matching carrying case included



We've all seen different models of portable scopes, meters, and scope/meters. We've also seen the price tag! Unless you were a field tech with a good sized test equipment budget they were out of the question. These Velleman "Personal Scopes" have changed all that and put a handheld digital scope within reach of the hobbyist, student, and technician! As I'm writing this catalog copy, I personally remember when I shelled out a couple thousand dollars for my first Scope Meter! And now you can buy one of these for several hundred dollars...with more features besides!

With today's technology, merely measuring voltage isn't enough. Whether you're an auto mechanic looking for electrical noise, working with audio equipment, or a student working on lab projects, a scope is a must! Instead of carrying around a digital multimeter you can actually have your own personal scope at about the same price! And besides a scope the display has DVM readout for dBm, dBV, DC, and True RMS! Frequency readout is also displayed on the screen through markers. Plus, the scopes have two



memories for digital signal storage! That's right, we said it's a storage scope!

The scopes run on 5 standard AA Alkaline batteries (not included) which provide up to 20 hours of use.



Rechargeable AA NiMH batteries can be used in place of standard Alkaline batteries and will be automatically charged with the included AC power supply adapter and charger.

The HPS40 also includes an RS232 interface cable for PC connectivity. A simple serial DB9 RS232 connection to your PC provides you with a high resolution

bitmap display of your screen at the touch of a button!

Perfect for recording measurement results. If you're working with electronic circuits, automotive applications, audio and stereo applications or any other type of electronic applications, the Personal Scope is for you...at a price that can't be beat! (Editors note, I carry one of these in my tool box, and it is the handiest thing in there! From audio hum, to DC measurements, I'm always the guy that can find it...and then they assume the same guy to fix it...grrrrrrr!)

HPS10SE

Personal Scope, 10MHz, Case, Probes, Power Supply, Assembled & Tested

\$229.9

HPS40

Personal Scope, 40MHz, Case, Probes, Power Supply, RS232 Out, Assembled & Tested

\$299.9

Portable Digital Oscilloscope With DVM Readout

- ✓ Digital waveform & measurement display!
- ✓ 10 MHz & 40 MHz sample rates
- ✓ Backlit LCD display
- ✓ RS232 output (40 MHz model only)
- ✓ Charger and matching carrying case included

SPECIFICATIONS

HPS10SE

Max Sample Rate: 10MHz (2MHz single shot)
Max Input Bandwidth: 2MHz (-3dB at 50mV, 1V & 20V/div x 1 setting)
Input Impedance: 1M ohm, 20pF standard scope probes
Input Coupling: DC, AC, and ground (zero reference)
Vert Resolution: 8 bit, ± 1 bit linearity
Trigger Modes: Run, normal, once, roll mode for 1s/div and slower timebase
LCD Graphics: 64 x 128 pixel, white backlight
Signal Storage: 256 samples with 2 memories, max 125 visible samples, 256 using X shift
dBm Measurement: -73dB to +40dB, ± 0.5 dB accuracy (0dBm=0.775V at 600 ohm)
dBV Measurement: -75dB to +38dB, ± 0.5 dB accuracy (0dBV=1V)
True RMS Measurement: .1mV to 80V, $\pm 2.5\%$ accuracy
P/P AC Range: 0.1mV to 160V, $\pm 2.0\%$ accuracy
Timebase Ranges: 0.2us to 1hr/div, 32 steps
Input Sensitivity Range: 5mV to 20V/div at time 1, 50mV to 200V/div at times 10, 12 steps
Probe Calibration Output: 2KHz/5Vpp approx
RS232 Output: None
Power Requirement: 9V, 500mA adapter provided
Batteries (not included): 5 AA Alkaline batteries or 5 AA NiMH rechargeable batteries
Battery Life: Up to 20 hours with AA Alkaline
Operating Temperature: 0° to 50° C (32° to 122° F)
Dimensions: 4.13" x 7.95" x 1.38" (105mm x 220mm x 35mm)
Weight: 14 oz (395g) less batteries
Accessories Provided: Foam lined carrying case, standard scope probes, AC power adapter/charger, users manual

HPS40

40MHz (10MHz single shot)
5MHz (-3dB at 5mV/div to 12MHz at 1V & 20V/div)
1M ohm, 20pF standard scope probes
DC, AC, and ground (zero reference)
8 bit, ± 1 bit linearity
Run, normal, once, roll mode for 1s/div and slower timebase
112 x 192 pixel, white backlight
256 samples with 2 memories, max 179 visible samples, 256 using X shift
-73dB to +40dB, ± 0.5 dB accuracy (0dBm=0.775V at 600 ohm)
-75dB to +38dB, ± 0.5 dB accuracy (0dBV=1V)
.1mV to 80V, $\pm 2.5\%$ accuracy
0.1mV to 160V, $\pm 2.0\%$ accuracy
50ns to 1hr/div, 32 steps
5mV to 20V/div at time 1, 50mV to 200V/div at times 10, 12 steps
2KHz/5Vpp approx
Plug-in to DB9 serial cable provided. Push button to PC computer bitmap display
9V, 500mA adapter provided
5 AA Alkaline batteries or 5 AA NiMH rechargeable batteries
Up to 20 hours with AA Alkaline
0° to 50° C (32° to 122° F)
4.13" x 7.95" x 1.38" (105mm x 220mm x 35mm)
16 oz (450g) less batteries
Foam lined carrying case, standard scope probes, AC power adapter, DB9 RS232 cable, user's manual

Professional RF Power Meter

KIT

Wired & Tested

- ✓ Broadband: PM50 10 kHz to 450 MHz ± 0.5 dB, 10 kHz to 500 MHz ± 2 dB;
- ✓ High dynamic range: better than 77dB!
- ✓ Power Handling: up to 50 Watts continuous maximum
- ✓ Readings auto-range and are displayed in Watts/dBm/etc.
- ✓ Easy to read LCD display with powerful microprocessor

High Performance
Power Meter...
At A Low Cost!

The PM50 digital power meter is what every RF lab technician or micro-broadcaster needs on his workbench. Until now, power meters of this capability cost thousands! Imagine being able to accurately measure RF power from almost any signal source! Once you use one, you will wonder how you ever did without it!

The PM50 includes a 50 watt, 50 ohm dummy load allowing you to tune your transmitter off air without causing interference. An intelligent speed controlled fan adjusts cooling of the load according to power measured! Extremely wide power range allows continuous measurement from an amazing 1 μ Watt to 50Watts, all without any manual range switching or setting - that's over 77dB! And accuracy is an astounding ± 0.5 dB over the entire specified frequency range!

Extreme dynamic range allows you to get meaningful measurements even with transmitters of less than 1mW of power or up to 50 watts! A powerful processor calculates and displays forward and reverse power, AM percent modulation, peak power, and average power. Try doing that with any other power meter for less than a thousand bucks! Use the PM50 if you need to test transmitters off-air or into a good 50 ohm dummy load. The PM50 include the matching case & knob set and power adapter so you have everything you need for a complete finished piece of RF test equipment. Case measures 5"W x 1 1/2" H x 5 1/4" D.

PM50

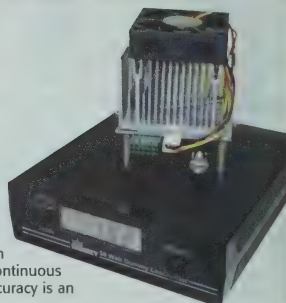
Power Meter/Dummy Load Kit, Includes Case And 110VAC Power Adapter

\$109.9

PM50WT

Factory Assembled & Tested PM50

\$154.9



KIT

Wired & Tested

Lead Acid Battery Charger

- ✓ Automatic ambient temperature compensation
- ✓ Bright front panel charge indicator
- ✓ Automatically adjusts charge voltage depending on the battery status

No More "Fried" Gel Cells!

The LABC1 came to life because our shop forklift never starts! Could we have the alternator fixed so the battery would charge? Sure... but where's the fun in that? The problem made us think of a common question asked by our customers "Why am I wasting money replacing those fried Gel Cell batteries long before their expected life span!" Thus the LABC1 was born.

The kit features fully automatic temperature compensation and automatic voltage level adjustment to avoid the dreaded "Over-Charging" scenario often found with other chargers! Whether you're charging your hobby kits' Gel-Cell or topping off the 12 Volt battery on your lawn mower, it's a simple two wire hook-up and walk away! When the battery comes to a full charge the LABC1 switches into "Float Charger" mode, keeping your battery ready for use at its optimal level.

To start charging your lead acid batteries the right way and avoid costly replacements, try the LABC1! Requires 14VAC@2A; order the PS21 power supply below. Includes the matching case set, measuring 5"W x 1 1/2"H x 5 1/4"D.

LABC1
LABC1WT
PS21

Lead Acid Battery Charger Kit With Case
Factory Assembled & Tested LABC1 With Case And PS21 Power Adapter
16VAC Output Power Adapter

\$39.95
\$89.95
\$19.95

Dr. NiCad Battery Conditioner & Charger

KIT

Wired & Tested

- ✓ Unique discharge before charge circuitry eliminates "memory effect"
- ✓ Safety first circuit with built-in timers and voltage sensors prevents battery damage

Don't Throw Out Those Batteries!

Advanced circuitry has optimized discharge-before-charge to eliminate memory effect and to condition batteries that have been poorly cared for in the past. Quick charge rapidly brings battery to full charge in less than 1 hour; just 15 minutes for some types!

And "top-off" charge mode squeezes every last bit of energy into each cell for the absolute maximum capacity. Switch-mode regulator controls constant current charge while being monitored by a negative delta-V system that cuts off the fast charge at the exact point of full charge...batteries are charged, not cooked! Runs on 12 to 15 VDC at up to 1.5 A. The custom matching case set is included, measuring 5"W x 1 1/2"H x 5 1/4"D.

DN1C
DN1WT

Dr. NiCad Battery Conditioner and Fast Charger Kit With Case
Factory Assembled & Tested DN1 With Case And Power Supply

\$44.95
\$79.95

Protolab Circuit & Test PC Simulator

- ✓ Simulate a circuit BEFORE building it!
- ✓ Simple computer interface and operation!
- ✓ Loads of sample circuits to simulate!
- ✓ Great learning tool for engineers!
- ✓ Professional CAD features at a hobbyist price!

**TOP
SELLER!**

**Create And Test That Circuit...
WITHOUT Building It**

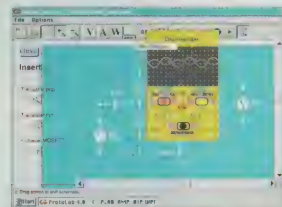
Easy to use PC interface. Easily create AC & DC circuits moments after installation with Protolab's easy "click and drag" component placement and on-line help. You choose from a complete list of active and passive components, all of which are included. Once built, you can test and analyze your circuit with five virtual instruments also included.

ProtoLab 4.0 is designed to work as a simulated prototyping lab. Insert components on a grid, similar to a breadboard, then test the circuit using the appropriate test instrument from the tool bar. Protolab's prototyping grid area is extensive and can handle a vast array of active and passive components. Protolab's predesigned circuit library includes: MOSFET & transistor amplifiers, bridges, sinewave oscillators, squarewave oscillators, phase shift oscillators, current mirrors, integrators, differentiators, transistor & MOSFET monostables, LC oscillators, tuned collector amplifiers, LC tuned circuits, power supplies, and voltage stabilizers.

Components include wires, junctions, grounds, resistors, capacitors, inductors, DC voltage sources, AC voltage sources, DC current sources, AC current sources, diodes, zener diodes, transistors, and MOSFETs. Including: Voltmeter, ammeter, wattmeter, oscilloscope, and ohmmeter. Requires PC (Not Mac!).

LAB4
Protolab4.0 Test Simulator Software

\$49.95



The Ramsey COM3010 Service Monitor

- ✓ 100 kHz to 1.0 GHz, full duplex
- ✓ Built-in power meter & dummy load
- ✓ Built-in frequency counter
- ✓ Built-in sweep generator
- ✓ Built-in SINAD meter
- ✓ Built-in calibrated RSSI meter
- ✓ Built-in RS232 control
- ✓ Built-in Li-Ion battery packs

**The Cost Effective
Solution For All Of
YOUR
Communications
Needs!**

See Page 76

**Wired & Tested**

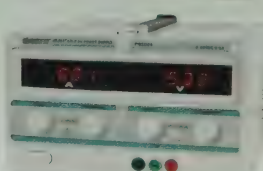
**Put A Lab Quality Supply
On YOUR Bench!**

These high-quality professional grade power supplies are fully assembled and ready-to-use in your lab or work bench. Built to exacting specifications, these supplies are perfect for your bench or lab, and are priced right to fit your budget!

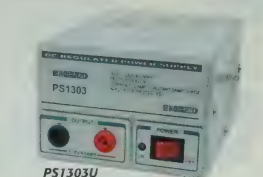
Lab Regulated Power Supplies

- ✓ Lab quality construction and performance
- ✓ Inexpensive, fits any demanding budget!
- ✓ Latest design!
- ✓ Variable voltage and current models!

PS3010U



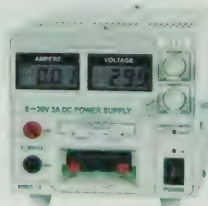
PS5005U



PS1303U



PS1503SBU



PS613U

PS3010U 0-30VDC	
FEATURES <ul style="list-style-type: none"> • LED display for voltage and current • Fine adjustment of voltage and current • Protection mode: current-limiting and short-circuit protection • Fuse-protected • Housing: heavy duty steel • Color: white-grey • Output connectors: IEC1010 	SPECIFICATIONS <ul style="list-style-type: none"> • Output voltage: 0-30V adjustable • Output current: 0-10A adjustable • Ripple voltage: 1mV • Ripple current: 5mA • Input power: 110VAC/60Hz • Dimensions: 12 13/64" x 10 7/16" x 5 5/16" • Weight: 26.46lbs
PS5005U 0-50VDC	
FEATURES <ul style="list-style-type: none"> • LED display for voltage and current • Fine adjustment of voltage and current • Protection mode: current-limiting and short-circuit protection • Fuse-protected • Housing: heavy duty steel • Color: white-grey • Output connectors: IEC1010 	SPECIFICATIONS <ul style="list-style-type: none"> • Output voltage: 0-50V adjustable • Output current: 0-5A adjustable • Ripple voltage: 1mV • Ripple current: 5mA • Input power: 110VAC/60Hz • Dimensions: 12 13/64" x 10 7/16" x 5 5/16" • Weight: 20.94lbs
PS1303U 13.8VDC	
FEATURES <ul style="list-style-type: none"> • Protection mode: current-limiting • Fuse-protected • Housing: heavy duty steel • Color: white-grey • Output connectors: IEC1010 	SPECIFICATIONS <ul style="list-style-type: none"> • Output voltage: 13.8V fixed • Output current: 3A continuous (5A peak) • Ripple voltage: 100mV • Input power: 110VAC/60Hz • Dimensions: 4 5/15" x 5" x 2 3/4" • Weight: 3.75lbs
PS1503SBU 0-15VDC	
FEATURES <ul style="list-style-type: none"> • LCD backlight display for voltage and current • Adjustment of voltage and current • Fuse-protected • Housing: heavy duty steel • Color: white-grey • Output connectors: IEC1010 	SPECIFICATIONS <ul style="list-style-type: none"> • Output voltage: 0-15V adjustable • Output current: 0-3A adjustable • Ripple voltage: 1mV • Ripple current: 5mA • Input power: 110VAC/60Hz • Dimensions: 8 7/16" x 6 3/64" x 3 3/4" • Weight: 7.75lbs
PS613U 0-30VDC, 5VDC, 12VDC	
FEATURES <ul style="list-style-type: none"> • LCD display for voltage and current • Adjustment of voltage and current • Protection mode: short-circuit protection • Fuse-protected • Housing: heavy duty steel • Color: white-grey • Output connectors: IEC1010, binding posts 	SPECIFICATIONS <ul style="list-style-type: none"> • Output voltage: 0-30V adjustable, 2.5A • Output voltage: 5VDC fixed, 1A • Output voltage: 12VDC fixed, 1A • Ripple voltage: less than 5mV • Input power: 110VAC/60Hz • Dimensions: 5 31/32" x 5 3/4" x 7 15/16" • Weight: 6.17lbs

PS3010U	Regulated Power Supply, 0-30VDC Adjustable, Factory Assembled & Tested	\$219.9
PS5005U	Regulated Power Supply, 0-50VDC Adjustable, Factory Assembled & Tested	\$269.9
PS1303U	Regulated Power Supply, 13.8VDC Fixed, Factory Assembled & Tested	\$32.9
PS1503SBU	Regulated Power Supply, 0-15VDC Adjustable, Factory Assembled & Tested	\$77.9
PS613U	Regulated Power Supply, 0-30VDC Adjustable, 5VDC, 12VDC, Factory Assembled & Tested	\$119.9

**Looking for a bench power supply but also need
a soldering station and digital multimeter?
Check out the brand new LAB1U on Page 71...
Now you can have it all in ONE UNIT!**



Wired & Tested

Measure Resistance, Capacitance, Inductance, & Temperature!

The DMM240 handheld LCR meter will measure resistance from 20 to 2000M ohms in nine ranges. It will also measure capacitance from 200pF to 200mF and inductance from 2μH to 20H and much more.

It has a 3½ digit, 2000 count display. Meter Capacitance in 8 Ranges, Max & Data Hold Feature, and Autoranging Frequency to 15MHz. Comes complete with temperature probe, standard probes, and holster style case.

Professional LCR & Temperature Meter

✓ Temperature probe included

Display:	3½ Digit, 2000 Count
DC Volt:	0-20V ±2%
Ohm:	0-20/200 ohm/2/20/200/2000k ohm/20/200/2000M ohm ±0.3%
Cap:	0-200pF/2/20/200nF/2/20μF ±2%/200μF to 200mF ±3%
Ind:	0-200μH/2m/20m/200mH/2H/20H±5%
Temp:	-20-500C ±2% 500C-750C ±3%
Freq:	Autoranging up to 15MHz ±0.1%
Cont:	Audible buzzer, diode test function
Over:	24VDC/24VAC Overload Protection
	10A Fused Protection
hFE:	Test Function

DMM240

LCR & Temperature Meter

\$99.95

Compact Multimeter With Data Hold

✓ Backlit display

Display:	3½ Digit LCD, backlit, 45 x 18mm Data hold
DC Volt:	200mV/2/20/200/1000V ±2%
DC Amp:	200μA/2m/20m/10A
AC Volt:	200/600V
Ohms:	200/2K/20K/200K/2M ohm, Continuity buzzer, hFE & diode test
Size:	68mm x 138mm x 30mm
Battery:	Standard 9V, included

If you're looking for a nice little DMM to keep in your tool box, this one's for you! Small and inexpensive, yet packed with great functions and features. Has all the normal ranges of a pocket DMM plus a plug-in transistor tester socket for quick transistor testing. Plus a built-in continuity test provides an audible buzzer for eyes-off testing.

The oversized 3½ digit display has a selectable backlight feature which illuminates the display in the dark. Besides all this, there is a professional "data hold" feature to hold and store a reading. Also features a high impact rubber holster just like the big boys! Includes a great set of test probes and even has the 9V battery installed. All this for under \$20! (That's why there's one in my tool box!)

Wired & Tested

Perfect For Your Tool Box!



DVM850BL

Compact Multimeter With Data Hold

\$14.95

Wired & Tested

Multimeter With Temperature, Capacitance, & Frequency

This is NOT Your Ordinary DMM!

✓ 30 ranges

✓ Includes temperature probe



Great for the technician, builder, hobbyist, or auto mechanic, this little DMM is not your typical digital multimeter! Measures DC Volts and AC Volts at 10M ohm impedance. Measures DC and AC current, resistance up to 200M ohm and it doesn't stop there! It also measures capacitance up to 20μF, frequency up to 20 KHz, and temperature all the way up to 1000°C.

Of course it also includes a dedicated transistor socket for NPN and PNP transistor testing, auto power off to save batteries, audible continuity and diode testing, and an oversized display. Sound too good to be true for 40 bucks?

We thought so too! That's why they're here! Comes complete with a professional rubber holster, standard & temperature test probes, user's manual, and a standard 9V battery.

Display:	3½ Digit LCD, 31 x 61 mm
DC Volt:	200mV/2/20/200/1000V ±0.5%
DC Amp:	2m/20m/200m/20A ±0.8%
AC Volt:	2/20/200/700V ±0.8%
AC Amp:	20m/200m/20A ±0.8%
Ohms:	200/2K/20K/200K/2M/20M/200M ohm, ±0.8% Continuity buzzer
Cap:	2000pF/20nF/200nF/2μF/20μF ±2.5%
Freq:	20KHz ±1.0%
Temp:	-50°C to 1000°C ±0.75%
	Continuity buzzer, hFE & diode test
Size:	88mm x 170mm x 38mm
Battery:	Standard 9V, included

DVM890F

Multimeter With Temp, Capacitance & Frequency

\$39.95

Dual Display DMM With RS232 Output

✓ RS232 output to your PC!
✓ Manual/auto range

Digital Readout, Analog Bargraph, PLUS RS232 Output!



We gave you an inexpensive pocket DMM above for under 20 bucks. Then we gave you a super multi-purpose professional multimeter that measured virtually everything for 40 bucks. What's next you ask? You won't believe it!

Everything PLUS RS232 serial data output for connection to your PC! That's right, now you can measure, control, and store your DMM and its readings on a graphical display on your PC!

Features both auto and manual ranging with a large 3½ digit display with a 38 segment analog bargraph. Includes all software, cable, probes, battery, and case.

Display:	3½ Digit LCD, backlit, 38 segment analog bargraph, with data hold
DC Volt:	4/40/400/1000V ±0.5%
DC Amp:	4mA/400mA/10A ±1.2%
AC Volt:	4/40/400/750V ±1.2%
AC Amp:	4mA/400mA/10A ±1.5%
Ohms:	2400/4k/40k/400k/4m/40m ohm ±1.2%
	Continuity buzzer, diode test, hFE test
Cap:	4nF/400nF ±4.0%
Temp:	0-400°C, 401 to 750°C ±3.0%
RS232:	DB9 serial with Windows software
Size:	78mm x 186mm x 35mm
Battery:	Standard 9V, included



DVM345DI

Dual Display Multimeter With RS232 Output

\$84.95



It's not a Digital Multimeter... it's better!

It's a hand held Digital Oscilloscope with a built-in DVM readout!

Available in 10MHz 40MHz models, put the power of scope and a digital DVM in your hand! Check it out on page 64!

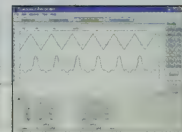
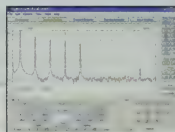
**Wired & Tested****The Next Generation
Of Scopes & Analyzers!**

This versatile and powerful "scope" harnesses the power of your pc or laptop to drive its software, eliminating the need for bulky stand-alone oscilloscopes, analyzers, and transient recorders! Just attach it to your laptop for easy troubleshooting readings in the field, or set it up on your workbench at home or the office.

Powerful software is included, along with a DLL giving you the ability to create customized applications to meet any additional needs! Its high sensitive display resolution, down to 0.15mV, combined with a high bandwidth and a sampling frequency of up to 1GHz are giving this unit all the power you need. The USB connection makes this unit a snap to set-up, no external power required! In the field measurements using a lap-top computer have never been this easy. And the readings are automatically stored for your future analysis and comparison.

There are many advantages to using a PC based oscilloscope, including custom software, larger/high resolution/color display, lower cost, easy data export, and networking/storage functions. Take advantage of your PC and the convenience of this feature-packed multifunction scope. Includes two 60MHz professional scope probes, USB cable, software and comprehensive manual. Requires Win98SE or newer that supports USB. Compatible with USB1.1 or USB2.0. From Velleman Instruments.

GENERAL		OSCILLOSCOPE		SPECTRUM ANALYZER		TRANSIENT RECORDER	
Inputs:	2 channels, 1 trigger input	Timebase:	20ns to 100ms per division	Frequency range:	1.2kHz to 25MHz	Time scale:	20ms/div to 2000s/div
Input impedance:	1Mohm, 30pF	Trigger source:	CH1, CH2, EXT or free run	Operating principle:	linear or logarithmic time scale	max. recording time:	9.4hours/screen
Bandwidth:	DC to 60MHz ± 3 dB	Trigger edge:	rising or falling	FFT resolution:	FFT (Fast Fourier Transform)	Storage:	automatic data storage
Max input:	30V AC or DC	Trigger level:	full-screen adjustable	FFT input channel:	CH1 or CH2	Storage time:	automatic recording for more than 1 year
Input coupling:	DC, AC, and ground	Step interpolation:	linear or smoothed	Additional feature:	zoom function	max. number of samples:	100/s
Power supply:	USB power, 500mA	Markers for:	voltage and frequency	Markers for:	amplitude and frequency	min. number of samples:	1 sample / 20s
PC compatibility:	Win98SE or newer	Input range:	5mV to 2V/division			Markers for:	time and amplitude
	800x600 minimum resolution, 1024x768 recommended	Input sensitivity:	0.15mV display resolution			Modes:	recording and display of screens
USB port:	USB 1.1 or 2.0	Readouts:	True RMS, dBm, dBm, p to p				
Includes:	Scope, two 60MHz scope probes, USB cable, software CD, manual	Recording length:	4K samples / channel				
Dimensions:	8.2" x 2.2" x 7"	Real time sampling freq:	1.25kHz to 50MHz				
		Sampling freq for rep. sig:	1GHz				

**PCSU1000 USB 2 Channel PC Scope & Analyzer, Factory Assembled & Tested****\$349.95****Analog Sound Level Meter**

- ✓ Measures 50 to 126 dB!
- ✓ 7 separate ranges!
- ✓ ± 2 dB accuracy!

**So, How Loud Is It...
Really!****Wired & Tested**

SPECIFICATIONS	
Range:	up to 126dB
Positions:	60, 70, 80, 90, 100, 110, 120dB
Load impedance:	1kohm min.
Distortion:	Less than 2% at 1kHz, 0.5V
Microphone:	electret condenser microphone, omnidirectional
Precision:	± 2 dB at 144dB
Weighting:	A or C
Response:	slow or fast
Output signal:	max. 1V deviation at 1kHz for the entire range
Power supply:	1 9V battery (included)
Battery test:	OK indication between 7 and 10.5V
Battery life:	110 operating hours (alkaline batteries)
Dimensions:	6.3" x 2.4" x 1.7"
Weight:	6.5oz

So you're at a concert and you want to know exactly loud it is... You're at work and you wondering if the ambient noise is below the safe level... You're really wacked out and you want to know if a jet engine at 10 feet really exceeds the threshold of pain... This little analog sound level meter is for you! It uses uses A and C weighting filters to accurately simulate the human ear's actual listening capabilities! The easy-to-read analog display allows for accurate measurement of environmental noise across a wide range (50 to 126dB).

Useful to measure sound levels in industrial and office settings, traffic/noise reduction studies, or to ensure your noise generation is in compliance with local ordinances. This meter features an omnidirectional condenser microphone with ± 2 dB precision at 144dB. Over 100 hours of operation from one 9V battery (included). From Velleman. (Also helpful in proving to your landlord exactly how annoying the tenants upstairs are!)

**AVM2050 Analog Sound Level Meter****\$39.95****Wired & Tested****Digital Precision Accuracy...
Yet Affordable!**

When you have to go the next step up from the inexpensive AVM2050 analog meter, here you go! Designed for industrial and professional use to meet or exceed IEC651 type 2 standards. Great for measuring sound levels when you need that extra digital precision, whether its industrial or office, an official survey, or just to make sure you are in compliance with local ordinances, this digital meter will give you high quality readings anywhere in the 30-130dB range.

The digital max hold and data hold display features will come in handy when logging your readings for compliance reports. Don't be fooled by its small ergonomic design, the DVM805 is a high quality meter designed for the most stringent applications. Includes A and C frequency weighting, fast and slow time response, and .1dB of resolution. Powered by one 9V battery (included), from Velleman. (Now you can even peak hold the noise from upstairs and show the landlord!)

Precision Digital Sound Level Meter**DVM805****Digital Sound Level Meter**

- ✓ Measures 30 to 130 dB!
- ✓ ± 1.5 dB accuracy!
- ✓ Precise digital readout!

SPECIFICATIONS	
Level range:	low: 30-100dB, high: 60-130dB
Accuracy:	± 1.5 dB 94dB @ 1kHz
Frequency range:	31.5Hz to 8kHz
Frequency weighting:	A, C
Time weighting:	fast, slow
Power supply:	1 x 9V battery (6LR61) (included)
Operating temperature:	0°C ~ +40°C (Less than 80% RH)
Storage temperature:	-10°C ~ +60°C (Greater than 70% RH)
Dimensions:	8.27 x 2.17 x 1.26"
Weight:	8.11oz

\$99.95

High Performance Yagi Antennas

- ✓ Construction that's rugged and simple
- ✓ Feed point fully watertight and sealed
- ✓ Cut elements during assembly to exact frequency desired

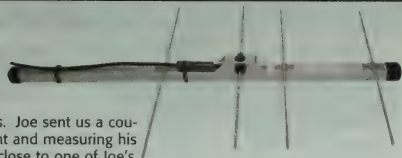
Joe Reiser, WJUR, probably the best known VHF'er, has entered into the antenna business with a killer line of Yagis. Joe sent us a couple of antennas to check out and were we impressed! We've got some pretty decent HP test gear here at the plant and measuring his antennas was a delight. Talk about a match at 50 ohms impedance; even our \$1800 EMI antenna couldn't come close to one of Joe's antennas.

Model	Elements	Gain	F/B Ratio	Length	Frequency
140-3	3	5 dB min	20 dB min	3 ft	140 - 300 MHz
400-4	4	7 dB min	15 dB min	2 ft	300 - 500 MHz
918-4	4	7 dB min	14 dB min	1.2 ft	902 - 928 MHz

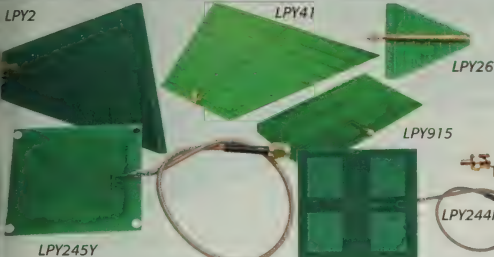
1403	Yagi Antenna, 140-300 MHz	\$79.95
4004	Yagi Antenna, 300-500 MHz	\$79.95
9184	Yagi Antenna, 902-928 MHz	\$109.95

KIT

Commercial Quality At A Hobbyist's Price!



Construction is rugged and simple. Joe wisely made the feed point fully watertight and sealed the coax right into it - no more antennas that go flaky when the weather's bad. Another nice feature is the ferrite sleeve balun, most often left out on other antennas. You'll find no coax radiation with this Yagi. In short, these are the finest 3 and 4 element Yagis on the market - those guarantee it!



Wired & Tested

TOP SELLER!

Broadband Coverage And NO TUNING!

This series of Log Periodic and Yagi PCB Antennas allows you to cover the entire spectrum from 400 MHz to 11.0 GHz! If you want to get the maximum performance out of your UHF to low frequency microwave wireless system, one of these little babies is the answer! Their directional property "compresses" the signal into a strong beam that is 4 times more powerful in the desired direction.

They are the ideal antennas for scanners, wireless LAN's, and other wireless devices. When you need a dedicated point-to-point link, they have no equal! Maintenance free construction on rugged FR-4 material boasts the added advantages of no tuning and no fragile antenna elements to break or twist! The small size and wide bandwidth make them ideal for feeding reflector antennas such as easily constructed corner reflectors or parabolic grids. Pick the one that's right for you and start enjoying the fruits of a well designed system!

The Log Periodic models LPY41 (400-1,000 MHz, SMA-female), LPY2 (900-2,600 MHz, SMA female), LPY26 (2,100-11,000 MHz, SMA-male), LPY244P (2.4GHz WiFi Patch, SMA male), and the LPY245Y (2.4GHz WiFi yagi, SMA male) easily interface to your system via the provided connectors. The wide bandwidth characteristics of the Log Periodic design ensure total reliability within their respective ranges. The Yagi model LPY915 (915 MHz, BNC-male) is a patented design perfect for directionally extending the range of your cordless phone or other 915 MHz wireless device. Finally, the answer to those poor range blues!

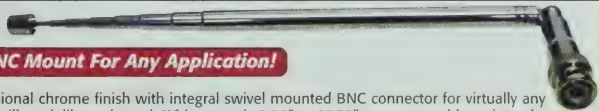
LPY41	Logi Log Periodic PCB Antenna, 400-1,000 MHz, Factory Assembled & Tested	\$39.95
LPY2	Logi Log Periodic PCB Antenna, 900-2,600 MHz, Factory Assembled & Tested	\$34.95
LPY26	Logi Log Periodic PCB Antenna, 2.1-11.0 GHz, Factory Assembled & Tested	\$34.95
LPY915	Directional Yagi PCB Antenna, 915 MHz, Factory Assembled & Tested	\$29.95
LPY245Y	Directional Yagi PCB Antenna, 2.4GHz WiFi, 8.5dBi Forward Gain, Assembled & Tested	\$29.95
LPY244P	PCB 4-Bay Patch Antenna, 2.4GHz Wireless LAN, 12dBi Gain, Assembled & Tested	\$34.95

Telescopic Whip Antenna

- ✓ High quality with BNC connection
- ✓ Covers VHF and UHF bands

TOP SELLER!

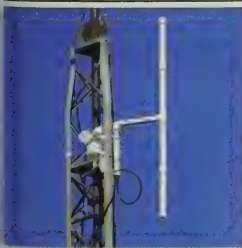
Swivel BNC Mount For Any Application!



Ideal for handheld portables, receivers, and communications test equipment. Professional chrome finish with integral swivel mounted BNC connector for virtually any application! From the top of equipment to 90 degrees on the back of equipment, it will work like a champ! Whip extends 5.25" to 27.75" to cover a wide variety of applications with ease!

MA10 Telescopic Whip Antenna

\$14.95



KIT

TOP SELLER!

Rugged PVC Construction... Keeps The Weather Out!

Tru-Match FM Antenna

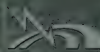
- ✓ Fully weatherproof - rugged PVC construction
- ✓ Matches 50 or 75 ohm systems
- ✓ Tunable for perfect match over the entire 88 to 108 MHz FM band

We've been besieged with calls asking us where to get a good quality FM Broadcast antenna. Remember, matching your antenna to your transmitter is the single most important link in your transmitter setup - and a good antenna and match are the secret to getting maximum range.

When we say "match" we mean electrical impedance match... if the proper impedances are not maintained between transmitter and antenna, power is reflected away from the antenna and back into the transmitter! This can cause the final amplifier stage to be damaged, not to mention spurious signals and lousy range. Buy this kit and get the most from your FM Broadcaster!

FM100 FM Broadcast Low Power Antenna Kit (25 W Max)

\$69.95



KIT

Wired & Tested

**Remove The Noise
Automatically!**

Signal Magnet Antenna

- ✓ Outstanding results from 500 KHz to 15 MHz
- ✓ High-Q Ferrite Rod antenna with Faraday shield eliminates noise from power lines, light dimmers, most static crashes, and more!

This antenna responds only to the magnetic field of the desired station and ignores the electrostatic field where most interference is found. It does a remarkable job pulling in stations lost down in the noise of powerline crud, fluorescent lamp buzz and light dimmer hash. Plus it's very directional, able to null strong stations on the same or nearby frequencies! We developed this antenna to pull in WGR an AM station more than 75 miles away, so we could listen to Buffalo Bills talk radio during the night. You can imagine all the powerline and equipment noise we have here at the factory. So, we came up with this ferrite rod, varactor tuned active antenna that's Faraday shielded - it only responds to the magnetic field - and boy does it do the job!

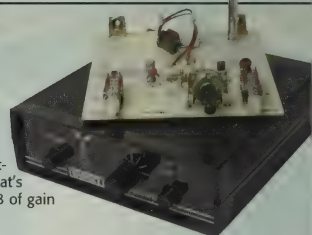
Designed to cover the AM broadcast band, but includes details on building for any frequency range up to 15 MHz; it works gang-busters on Shortwave. Works indoors or out contained in rugged PVC pipe with a single RG-59 coax cable connector. Operates with up to 500 feet of coax cable (you supply) between antenna assembly and control box (size: 5" x 5 1/4" x 1 1/2"). Includes all parts, matching case set and precut PVC materials. Operates on external 120 VAC power adapter that is included. Antenna is 9 1/2" x 9" long, L-Shaped 1" pvc pipe with end caps. *(It worked just great to listen to the Bills players explain for 4 straight years why they lost the Super Bowl!)*

**SM100
SM100WT**
**Signal Magnet Noise Reduction Antenna Kit With Case
Factory Assembled & Tested for AM Band**
**\$89.95
\$134.95**

Active Receive Antenna

- ✓ New design for 2007!
- ✓ Works with HF or VHF/UHF
- ✓ Performs like a 60' Long Wire!
- ✓ Operates as a stand-alone antenna or in conjunction with an existing antenna

KIT

**The Easy Antenna...
Regardless Of Frequency!**


Our AA7 has been a favorite for the serious DX'ers, and now it's even better! Redesigned for 2007, it works on all bands - short-wave, HF, VHF and UHF! Imagine a self-contained unit just 4 inches square that pulls in the signals like a 60 foot long wire; that's the advantage of an active antenna. For jazzing up VHF/UHF receivers and scanners, the AA7 has you covered, too. Over 15 dB of gain pulls in the weak ones, whether you use the included telescopic whip or an outside antenna.

Features of the AA7 include: Front panel RF gain control, power switch with preamp bypass switching, rear panel input and output connectors, convenient 9 volt battery operation and telescopic whip antenna (or connect your own antenna with the BNC connector.) We think you'll agree that the AA7 is simply the most practical and best value of any active antenna on the market! Includes whip antenna and matching case set. Operates on a standard 9VDC battery (not included). Case size 5"W x 1 1/2"H x 5 1/4"D.

AA7B

Active Antenna Kit With Case

\$39.95

Looking For FM Broadcast Antennas?

See our FMA200 5/8 Wave vertical antenna on Page 8
GET MAXIMUM RANGE BY USING THE PROPER ANTENNA!



TERMS AND CONDITIONS, AKA: THE FINE PRINT!

All of this is printed on saddlestitched envelope/order form, but just in case someone boosted it from this catalog, here it is...again!

Payment - Check, money order, and credit card (MC, VISA, American Express, Discover) are all accepted. If paying by credit card, please include the full card number and the expiration date. If you are paying by credit card, you must provide the billing address exactly as it appears on your credit card statement.

Sales Tax - NY and VA residents must add appropriate sales tax unless a signed resale certificate accompanies your order.

Prices - Prices shown are those in effect at the time of publication. We work to hold prices firm, however prices are subject to change without notice. Current prices will prevail at the time an order is placed. Visit www.ramseykits.com for any last minute updates!

Shipping -

Continental U.S. customers - We normally ship via Parcel post or UPS depending on the size and value of the order. If we are shipping via UPS you must provide a physical address, as UPS will not deliver to P.O. Boxes. Add \$7.95 for shipping, handling, and insurance on all orders. Express and air shipments are extra and priced at cost. COD is an additional \$10.00.

Alaska, Hawaii, and Puerto Rico - Specify USPS First class, UPS 2nd day, or UPS overnight only. The amount will be added to your order.

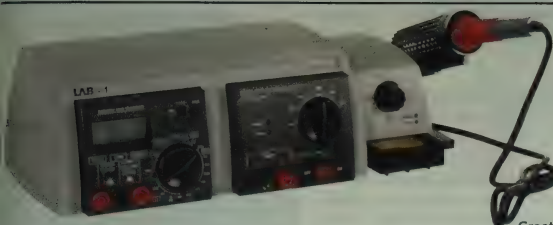
Canadian customers - Make checks payable in U.S. funds or use a credit card. Add 20% to the cost of your order for shipping to a maximum of \$50.00 for parcel post shipment. If you request UPS for delivery, we will confirm the amount to you prior to shipment. **These charges do NOT include any international duty charges.** Be aware, UPS shipments may be delayed in customs.

Overseas customers - We will determine the best method and cost for your location, and will confirm to you before shipment.

Returns - Examine (do not build) any kit for up to 10 days. If not completely satisfied, return in the original packaging for a full refund. Kits that are partially built cannot be returned. Wired and tested items can also be returned if in their original packaging, suitable for resale, within 10 days. Returns received after 10 days will be subject to a restocking fee.

Design Changes - From time to time we make design changes. Some items may differ slightly from photographs and descriptions in the catalog. You can be sure that such changes are made in the interest of better performance or appearance. In addition, with the fluctuating pricing changes of some electronic components, pricing is subject to change.

Manual Preview - Looking at a kit and want to review it more closely? Our manual preview policy lets you purchase most of our manuals for \$5.00 (a few are more). Purchase price of the manual will be credited against your future associated kit purchase. You can also download most manuals (excluding the schematic!) at no charge from our website at www.ramseykits.com



Wired & Tested

**We Just Made
Space On Your Bench!**

3-In-1 Multifunction Lab Unit

- ✓ Digital multimeter!
- ✓ Regulated power supply!
- ✓ Temperature controlled soldering station!
- ✓ RoHS lead-free soldering compatible!
- ✓ Everything all in one unit!

Anyone who has worked with electronics knows the hassle of dealing with various bulky devices needed to get the job done. This brand new 3-in-1 lab kit gives you the most commonly required tools in one amazing compact package!

Great for your home bench, where there's just so much space to go around! For the school or technical institute that needs to equip multiple benches with the basics, the 3-in-1 lab can't be beat! Not only for size and efficiency, but for cost as well!

Take a close look! On you left is a multi-function 3½ digit digital multimeter. Its large backlit LCD display can be seen from anywhere on your bench while you're working. The DMM also features built-in transistor, diode, and continuity testing, data hold, and audible alarm. A great DMM that any bench could benefit from.

Next up, the regulated lab DC power supply. Switch selectable ranges of 3V, 4.5V, 6V, 7.5V, 9V, and 12V provide a continuous duty current of 1.5 amps with a 2 amp peak! Features both overload protection and overload indication. Full size color coded binding posts are provided front and center for connection to your project under test.

To the right we have a high quality temperature regulated soldering station. One would think there's not much to say about as soldering station but not the case here. The 24V low voltage iron features an isolated ceramic 48 watt temperature controlled element. Front panel control gives you variable tip temperature control from 150°C to 450°C (300°F to 840°F) and LED indication of power-on and heating-on. A pull-out tip cleaning sponge is conveniently located right up front. And unlike stand alone soldering irons, a protected iron holder/stand is attached to give you a convenient place to store the iron without the possibility of burning yourself! It gets even better... this soldering station is RoHS or Lead-Free compatible! What does that mean? Lead-Free solder requires a higher melting and flow point and requires the soldering station to maintain that temperature throughout the soldering task. Just set the temperature for the higher temperature (typically 350 to 400°C) and this station is designed to maintain that temperature. Replacement tips and irons are also available.

DIGITAL MULTIMETER	SPECIFICATIONS REGULATED POWER SUPPLY	SOLDERING STATION
<ul style="list-style-type: none"> • 3½ digit backlit LCD • Automatic polarity indication • DC voltage: 200mV to 600V in 5 steps • AC voltage: 200V and 600V • DC current: 200µA to 10A in 5 steps • Resistance test: 200 ohm to 2Mohm • Diode, transistor and continuity test • Data-hold function and buzzer • Input power: 9V battery, included 	<ul style="list-style-type: none"> • Selectable output voltages: 3, 4.5, 6, 7.5, 9, 12 VDC • Output: 1.5A (2A peak) • LED overload indication • Output on/off switch • Very low ripple • LED power indication • Input power: 110VAC, isolated power supply 	<ul style="list-style-type: none"> • Low-voltage iron: 24V ceramic 48W heating element with temperature sensor • Temperature range: 150-450°C • Lead-free soldering possible • Sponge and spare bit included • Input power: 110VAC, isolated power supply

It gets even better! While the 3-in-1 lab is a multi-function unit, each component is electrically isolated from each other and utilize separate power supplies for the ultimate in safety, circuit protection, and reliability! The DMM features its own battery supply to keep it totally isolated from the AC supply!

What's included? The 3-in-1 lab, high quality test probes for the DMM, 9V battery for the DMM, solder sponge, spare solder tip, AC power cable, and a comprehensive user manual. It simply includes everything you need to get started! From Velleman Instruments.

AB1U	3-in-1 Multifunction Lab, Factory Assembled & Tested
BITC10N1	Replacement Solder Tip, 1.6mm Round
BITC10N2	Replacement Solder Tip, .8mm Round
BITC10N3	Replacement Solder Tip, 3.0mm Slant Edge
BITC10N4	Replacement Solder Tip, 2.0mm Slant Edge Pointed
LAB1SCS	Replacement Plug-In Soldering Iron Unit

\$119.95
\$2.95
\$2.95
\$2.95
\$2.95
\$16.95

Lead Free Soldering Station

- ✓ Specifically designed for Lead Free soldering
- ✓ Temperature adjustable from 392 to 842° F (200 to 450° C)
- ✓ ESD safe, meets or exceeds MILSTD for CMOS device protection
- ✓ RoHS application compliant
- ✓ Ergonomic mini-handle soldering iron
- ✓ Digital tip temperature readout in °F or °C

**Get Ready For Lead Free
and RoHS TODAY!**

We've all heard about it and are getting ready for it...referred to in the industry as RoHS from the European Union. In plain English it stands for the Restrictions of the use of hazardous substances in electrical and electronic equipment.

What this means to all of us in the electronics business is that we need to start soldering and designing/building circuits that are lead-free. Lead is the "hazardous substance" as defined by RoHS standards! There, I said it all, and now you know the answer!

What to do about it? Solder will be composed of Tin, Copper, and Silver components therefore lacking lead, the most common component thought of in regards to soldering. For the casual hobbyist, this merely means that you need to have the proper equipment needed for such soldering. Removing lead makes the melting point higher and therefore requires a higher temperature soldering iron or station. There are a lot of other issues but I don't have a hundred pages and several more hours to go through it! I suggest you research RoHS on the internet for more information!

We DO have, however, a very economical soldering station specifically designed for lead-free soldering. That means a variable tip temperature to reach up to 850° F while maintaining a stability of ±3°C while operating. Needless to say, such regulation and high temperature requires specialized heating elements with rapid ramp up and down time. In addition, suitable tips must be available to maintain proper quality at the temperatures required for lead-free soldering. Includes a standard 1/64" fine chisel solid tip designed for lead-free soldering.

The LF1000 is your answer to RoHS and the start of your compliance with lead-free soldering practices. Don't delay, get ready today! From Xytronic.





Temperature Controlled Soldering Station & Fume Extractor

- ✓ Integral fume extractor quickly removes smoke and fumes.
- ✓ Built-in high efficiency, low noise brushless exhaust fan
- ✓ Easy to replace activated carbon filter absorbs noxious flux and lead fumes
- ✓ Variable electronic temperature controlled soldering station attached
- ✓ Ergonomic mini-handle soldering iron
- ✓ ESD safe, insulated ceramic heater, spike free zero voltage switching
- ✓ All-in-one extremely convenient package, ready to use on your bench

**TOP
SELLER!**
**Automatic Fume
Extraction At
EVERY Work
Station!**

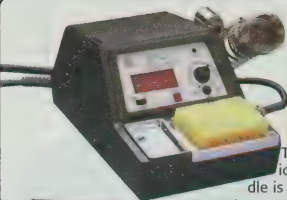

We've all sat at the bench and soldered some quick circuits. We have also sat at the bench have worked on a big project, soldering for hours at a time, not thinking twice about the fumes. The big culprit is the rosin core center in electronic solder. This flux is an integral part of the soldering process to prepare the work surface and the components being soldered.

Not to get overly technical, but flux is composed of rosin-resin and mixed with an activator (halogen organic agent) that, as the temperature increases, generates noxious components such as salicylic acid and pinene commonly seen as smoke rising from the work area. High content ratios of resin generate phenol (C6H5OH) and the activators can emit hydrogen chloride (HCL) and other compounds. This is stuff you really don't want to constantly breathe while you're soldering! Not only do you not want to, but there are occupational hazard standards controlling the permissible amounts of such compounds in the work area. The 456DLX can not only save you and your health from the fumes, but help you meet these standards!

Designed for use on the factory floor, in R&D, and by hobbyists in their homes, the 456DLX provides an economical, space saving, and super efficient method to eliminate the hazard of solder fumes. It also improves the work place by eliminating headaches, nausea and eye irritations often associated with exposure to these fumes. A high performance fan together with an easy to replace activated carbon filter does a super job. The activated carbon has a surface area of 1250 m square/gram and the total weight of the filter is 500 grams/meter square. The dust collection efficiency of the filter is 30% while the carbon filter can absorb up to 30% of its carbon weight in noxious components. In other words, it works!

When we looked for an ideal solution we were extremely conscious of limited bench space. Therefore, the fume extractor couldn't take up much more space than the soldering station we were using. The answer was simple...have both units in one! The 456DLX features a variable electronic temperature controlled soldering station built right in! Variable control gives you a wide temperature of 500-800° F. The iron has a new ergonomic mini-handle for comfort and ease. Comes complete with a precision 1/32" soldering tip. Additional interchangeable tips are available in a variety of sizes. That's right, put your old soldering station or soldering iron away and use just one product for both soldering and fume extraction. A protected iron holder and sponge tip cleaner are also attached to the side of the station making it the perfect all-in-one soldering tool. If you're looking to control the hazardous fumes of soldering, looking for a super high quality temperature controlled soldering station, and staying on a budget, the 456DLX is for you! From Xytronic. *(You will be amazed when you see the fumes from each solder connection get sucked away from your face!)*

456DLX	Temperature Controlled Soldering Station/Fume Extractor Station	\$132.99
98804	Replacement Interchangeable Tip, 1/32" For 456DLX and 137ESD	\$9.99
98805	Replacement Interchangeable Tip, 1/64" For 456DLX and 137ESD	\$9.99
98806	Replacement Interchangeable Tip, 1/16" For 456DLX and 137ESD	\$9.99
98807	Replacement Interchangeable Tip, 5mm Right Angle Chisel For 456DLX and 137ESD	\$12.99


**Lab Quality At A
Hobbyist Price!**

Auto-Temp Precision ESD Safe Soldering Station

- ✓ Digital tip temperature readout in ° F or ° C
- ✓ Temperature adjustable from 392 to 896° F (200 to 480° C)
- ✓ Rapid heat-up ceramic heating element
- ✓ Lightweight ergonomic soldering handle
- ✓ Front panel calibration port

The 137ESD represents the most versatile and advanced soldering station available today that meets all of the needs of the electronics production industry, service technicians, engineering departments, and the advanced hobbyist. The detachable soldering iron handle is designed with a highly insulated ceramic heating element which incorporates a state-of-the-art PTC sensor to insure accurate temperature performance.

Zero voltage switching and fully grounded design makes the 137ESD safe for Electro-Sensitive Devices. That with the highly accurate temperature stability over the entire range makes it ideal for use on such circuits and components. The lightweight ergonomic handle and grip reduces operator fatigue while making soldering operations a breeze. Comes complete with one precision 1/32" soldering tip. Uses the same interchangeable tips as the 456DLX above. Check our website for additional options, tips, and configurations. From Xytronic.

137ESD	Auto-Temp Precision ESD Safe Soldering Station	\$167.99
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Variable Temperature Soldering Station

- ✓ Variable temperature controlled!
- ✓ 5 to 40 Watt
- ✓ Built-in holder and tip cleaner
- ✓ Interchangeable tips

**Don't Damage Your Board...
Control The Temperature!**

Here's the ideal entry level soldering station for building your Ramsey kit - and for your bench! Made by Weller, the leader for decades in electronic soldering equipment. The WLC100 is the perfect soldering station for the professional or serious hobbyist who requires higher performance than a standard soldering iron, but doesn't want to pay a fortune! The WLC100 soldering station provides variable power from 5 to 40 watts for precise tip temperature control.

Just like the expensive industrial soldering stations! A built-in holder and tip cleaning sponge are included. A pre-tinned 1/8" screwdriver tip comes with the station. If you're looking for quality on a shoestring budget, the WLC100 is for you! Operates on 120VAC, 60Hz. From Weller.

WLC100	Weller Soldering Station, 5-40 Watt Temperature Controlled	\$49.99
ST2	3/32" Screwdriver Tip	\$6.99
ST3	1/8" Screwdriver Tip	\$6.99
ST4	3/16" Screwdriver Tip	\$6.99
ST6	1/32" SMT Screwdriver Tip	\$6.99





Technician's Solder

- ✓ Standard Electronics 60/40 blend!
- ✓ Lead-Free RoHS 96.5/3.5 blend
- ✓ .032" diameter, 1 pound spool

Whether it's for building your new kit, or just for your bench, this is the perfect solder. Don't destroy your kit investment by using the wrong solder, or solder with low quality flux core. This solder is made exclusively for electronic applications by one of the leading manufacturers. The size is perfect for board soldering, thru-hole, SMT and more. Available standard or RoHS lead-free compliant. Lead-free is 96.5%TN, 3%AG, .5%CU (not just TN/CU!). One lb spools.

RTS12	60/40 Electronics Solder, 1 Pound	\$19.95
RTS16	96.5/3.5 RoHS Lead-Free Solder, 1 Pound	\$29.95



Helping Hands & Magnifier

- ✓ Built-in magnifier!!
- ✓ Alligator clip holders grip anything!

So you're trying to hold that small board, while holding the transistor you're trying to solder in, and holding the soldering iron, and holding the solder. Wait a minute, that's 4 hands! Not a problem! Just clip the board, junction or component you're working on onto the bench holder, swivel it wherever you want it, and go to work! What, you can't see? It even has a built-in magnifier!

HH3	Helping Hands & Magnifier	\$8.95
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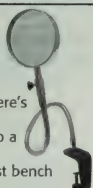


Bench Gooseneck Magnifier

- ✓ 3 1/2" magnifier!
- ✓ 19" flexible gooseneck!

When you're working with small surface mount components (SMT) there's nothing like a stronger set of eyes! Well we found the perfect, and incredibly economical solution! This large 3 1/2" magnifier is attached to a 19" gooseneck that stays right where you put it. And that is usually between your eyes and the PC board you're soldering! Heavy duty cast bench clamp mounts to any bench, desk, or counter top.

VTMG5	Bench Gooseneck Magnifier	\$7.95
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Non-Conductive Tweezers

- ✓ ESD safe!
- ✓ Great for SMT and other small parts!

We've discussed tweezers and magnifiers while working with SMT components. Working with some highly sensitive components our engineers asked for some ESD safe tweezers. We looked, we found, and now that they're all set, here they are for you! This set of 4 non-conductive tweezers are perfect for any static sensitive devices you may be working on. And...they are priced right!

VTWSET2	Non-Conductive Tweezers Set	\$3.95
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OptiVisor Headband Magnifiers



Probably the handiest helper you can have for working with small electronic parts. When you need to see a closeup view, simply flip the visor down. When done, flip it back up! Fits over your standard glasses. Made in the USA by Donegan Optical and available in either 2.5x diopter, or 3.5x diopter power. Additional 2.5x flip up OptiLoupe attaches to provide an additional 2.5x magnification for those really hard to see items! If its dark, get the VisorLight to brighten things up! One of our biggest selling items!

Available in either 2.5x diopter, 3.5x diopter power. Additional 2.5x flip up OptiLoupe attaches to one side to provide an additional 2.5x magnification for those really hard to see items! Left in the dark? No problem, the VisorLight clamps to the OptiVisor to provide 6,000 candlepower of Xenon light (operates on 2 standard AA batteries (not included) in a battery pack that can either be headband or belt-clip mounted. (I'm over 40, and therefore...these are the greatest things ever invented!)

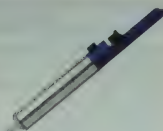
RTS26	Optivisor 2.5x Headband Magnifier	\$32.95
RTS25	Optivisor 3.5x Headband Magnifier	\$34.95
RTS24	OptiLoupe Additional 2.5x Flip Up Screw-On Eye Loupe For OptiVisor	\$8.95
RTS23	VisorLight For OptiVisor, 10" Cord For Headband Mounting	\$19.95
RTS22	VisorLight For OptiVisor, 42" Cord For Belt-Clip Mounting	\$19.95

Solder Sucker

- ✓ Eliminate PC board damage!
- ✓ Cleans out holes with ease!

For 5 bucks, this will probably be the most valuable tool you've ever bought! Even the most experienced solderer has problems removing components from PC boards without one! One hand loading and one hand operation. Just heat up the joint, place the special tip over the joint, and squeeze the trigger. Solder is sucked right from the board and even plated-through holes! It's that easy!

SS01	Solder Sucker	\$4.95
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Panavise Bench Vise

- ✓ Holds PC boards at any angle!
- ✓ Heavy duty weighted base!

Trying to solder and unsolder tiny components on small boards can be a challenge for even the most experienced. Here's a gem of a handy vise that is very sturdy and has the flexibility to hold boards at virtually any angle. The heavy base holds even the largest boards without being attached to a bench. Includes 2 7/8" jaws and a large base/parts tray with lockable flex joints.

RTS13	Panavise Bench Vise	\$39.95
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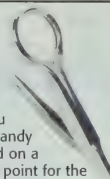


Magnifier Tweezers

- ✓ The perfect 2-in-1 tool for SMT!
- ✓ Great for your tool box!

Working with SMT components a good pair of tweezers is a must. And as you know, a good magnifier is also a must. So what do you keep in your tool box to solve THAT problem? Simple, this super handy combination tweezers and magnifier! This 1" magnifier is mounted on a slick 2 1/2" chrome handle with a fold-out precision tweezers. Focal point for the magnifier is matched to the tweezers point for easy use.

VTMG7	Magnifier Tweezers	\$3.95
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Assorted Chemicals for Electronics

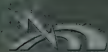
Better living through Chemistry!

From CRC Chemicals, the leading manufacturer of electronics chemicals, comes a great assortment of helpful products!



- Enviro-Wash is a "green" contact cleaner which won't damage plastic!
- Duster fires a powerful blast of air to blow away dirt, dust & debris.
- No-Clean Flux Remover is a non-flammable rapidly evaporating flux remover designed especially for No-Clean Flux.
- Freeze Spray is an aerosol coolant system that instantly freezes surfaces to -60°F! Great for locating thermal intermittent components, failures, and shorts.
- Anti-Stat neutralizes and prevents static electricity by forming an ultra-thin invisible film (won't attract dust or other contaminants!)

04000	Enviro-Wash	\$24.95
04065	Duster	\$6.95
14086	Freeze Spray	\$10.95
04030	No-Clean Flux Remover	\$10.95
04055	Anti-Stat	\$5.95



Magnetic "Pick-Up" Tool

- ✓ Screwdriver-style handle
- ✓ Extends to 16"
- ✓ Pick up those dropped parts!



We've all been there: you drop something through a grating, in a small crack, etc. You strain and stretch but your prize is just out of reach! Well strain no more true believer, here is your solution! This handy tool stretches out to approximately 16" and is tipped with powerful magnet, allowing you to retrieve your lost metal items! (Remember that MacGyver episode where he magnetized a metal pole to retrieve some lost keys when they fell through a sewer grate?)

900017 Magnetic Pick-Up Tool \$3.95

5" Precision Flush Cutters

- ✓ Micro tips for precision cutting!
- ✓ Copper: 16 AWG
- ✓ Get those hard-to-reach leads!
- ✓ Ergonomic cushioned grips



When you need maximum precision cutting, check out these cutters! Extremely sharp tip reaches into highly restricted areas and cuts cleanly every time! Features ergonomic green cushioned grips for easy cutting. These are durable enough for a long life of cutting!

200071 5" Precision Flush Cutters \$4.95

5.5" Needle-Nosed Pliers

- ✓ Smooth jaw prevents damage
- ✓ Cushioned grip handles
- ✓ Spring return
- ✓ Precision tips



These pliers will get the job done! Cushioned black rubber grips mean easy handling and comfort, and the smooth jaw means no scraping up your components! (The perfect companion to a nice pair of dikes!)

100013 5.5" Needle-Nosed Pliers \$9.95

Student Tool Kit

- ✓ Great for Tech School!
- ✓ Easy-to-Carry Case!
- ✓ All the Basics!

This tool kit has all the basic tools for working with electronics. Great for students or beginning hobbyists! Includes Cutter, Pliers, Tweezers, IC Extractor, Utility Knife, Brush, Desoldering Pump, Hex Key Wrench Set, Soldering Iron, 3 Phillips Screwdrivers, and 3 Slotted Screwdrivers! All this in an attractive and handy zippered case!

500016 Student Tool Kit \$52.95

Computer Maintenance Tool Kit

- ✓ The Kit for Computer Pros!
- ✓ Over 30 Pieces!

Includes Everything From the 500-003 Plus:

- 5" Micro cutters
- 6" Adjustable wrench
- Wire Stripper/Cutter
- PLCC Extractor
- Spring hook
- Blowing brush
- Inspection Mirror
- 7 pc folding hex set
- Field service ESD kit (mat and straps)
- Mini-flashlight
- Ratcheted screwdriver handle
- 6 pc nutdriver blades for ratcheted handle
- 12 pc screwdriver blades for ratcheted handle
- 2 pc removable tool pallets



500026 Computer Maintenance Tool Kit \$139.95

4 Piece Pick Set

- ✓ Stainless steel
- ✓ Durable construction
- ✓ Easy-grip textured handles



Ideal for separating wires, removing small fuses, "O" rings, retrieving washers and loose parts too small to pick up with fingers, these little picks will come in handy! Set includes one straight tip, one curved tip, and two different angles of hook tips (These are for circuit boards, electronics, etc. and not for use on your teeth...unless you're a Dentist!)

900205 4 Piece Pick Set \$4.95

4.5" Full-Flush Diagonal Cutters

- ✓ Hard Steel: 20AWG
- ✓ Soft Steel: 16 AWG
- ✓ Copper: 12 AWG
- ✓ Cushion grip handles

New For 2007

The most important tool while working on PC boards... a pair of dikes! These cutters are forged from high quality alloy steel for maximum strength and durability! Features black cushioned grips for easy cutting. These are durable enough for a long life of cutting hard or soft wires!

200057 4.5" Full-Flush Diagonal Cutters \$13.95

Needle-Nosed Pliers

- ✓ Extra-thin tapered nose
- ✓ Cushioned grip handles
- ✓ Great for SMT
- ✓ Extra fine tips



These pliers will get the job done, even if it's inside a very tight opening! Cushioned green grips mean easy handling and comfort, and a unique extra-long and extra-thin nose gets those hard to reach components with ease!

100042 Needle-Nosed Pliers \$4.95

Computer Service Tool Kit

- ✓ Includes Most Computer Service tools
- ✓ Zippered Carrying Case

Includes all these items and more!

- 5" diagonal cutter
- 5" long-nose pliers
- All-in-one crimp tool
- Tweezers
- IC extractor/insertor
- Desoldering braid & solder
- 8-bit pack
- Assorted screwdrivers
- Soldering iron



500003 Computer Service Tool Kit \$49.95

33 Piece Security Bit Set

- ✓ 5 different types of security bits!
- ✓ Handy case included!

We've all run into them. Those special little screw heads that you can't remove! They are frequently used in electronic equipment to keep you out of it!

Now with this 33 piece set of bits your headaches are gone! Includes standard 1/4" driver bits for secure torx/star, secure hex, secure tri-wing, secure fork and secure four wing, in all common sizes. Includes a handy carrying case to keep your bits in order. (Now you can remove those "special" screws they don't want you to!)



VTBT5 33 Piece Security Bit Set \$7.95



100 Piece Security Bit Set

- ✓ Expanded security bit selection!
- ✓ All common standard bits!
- ✓ 2 bit holders and 2 extensions!

The Ultimate Bit Set!

We introduced the VTB5 security bit set (previous page) and it became an extremely popular product. We finally gave the hobby enthusiast the ability to open those secure screws on their equipment! This set contains 100 pieces and includes all the security bits in the VTB5 kit and a lot more! includes the following:

- Phillips bits
- Pozzi bits
- Square bits
- Flat bits
- Antenna remover bits
- Star bits
- Tri-wing bits
- Star with center bits
- Four-wing bits
- Metric hex bits
- Clutch bits
- Fractional hex bits
- Dodecagonal star bits
- Metric hex with center bits
- Fractional hex with center bits
- Wing nut driver
- Socket bit holder
- Magnetic bit holder
- 1" extension
- 2" extension

All bits are chrome vanadium construction for long life, and include a very handy custom case.

VTBT11 100 Piece Security Bit Set \$9.95

Master Electricians Kit

- ✓ Over 50 invaluable tools!
- ✓ Durable Carrying Case!
- ✓ Don't get stuck without the right tools!

Master Your Electronics!

This tool kit has everything! Remember the Boy Scout motto: "Be Prepared!" With this kit, you always will be! Includes all the following in a great attache case:

- Utility component storage box
- 2 sizes of long nose plier
- Diagonal cutting plier
- Lineman's plier
- Bent nose plier
- Side cutting plier
- Reverse action tweezer
- 3pcs soldering aid tools
- Adjustable wrench
- Quick heat soldering iron
- 10 assorted pro-soft s/d
- Desoldering braid and pump
- Brush
- 6pcs electronic screwdriver set
- Crimping tool
- 5pcs needle file set
- Testing screwdriver
- Alignment tool
- IC Extractor
- Oil Can
- Flashlight
- 7pcs folding hex key set
- 3 prong holder
- 6pcs wrench set
- Carpenter hammer
- PVC insulated tape
- Scissors
- Solder core
- Parts Tube
- Heat Sink
- Utility Knife (3 blades, self loading)
- Measuring tape
- Inspection Mirror
- Slip-channel pump pliers (10")
- Pallet
- Heavy-Duty Carrying Case

902124 Master Electricians Kit \$164.95

Six-In-One Mini-Hammer



It's Hammer-Time!

This Six-in-one hammer comes with five different interchangeable tips, making it the most versatile little hammer around!

Includes two round steel tips, one flat brass tip, one flat plastic tip, and one tinner's steel. Innumerable applications... one hammer! (Thor wishes he had one of these every time he accidentally demolishes a delicate project with Mjolnir!)

02116 Six-in-One Mini-Hammer \$9.95

Communications Maintenance Kit

- ✓ Over 20 tools!
- ✓ Deluxe Aluminum Frame Case!
- ✓ Even Includes Tone-Probe!

New For 2007

All the Communication Tools You Will Ever Need!

This kit features all the tools communications professionals need! 20 tools in a heavy-duty aluminum framed carrying case (case measures 17-5/16"x13-3/8"x6-11/16" and weighs 18.3lbs) mean you've got all the troubleshooting power you need at your fingertips... wherever you go!

Whether you're fixing the phone lines in the garage or on-site with a corporate customer, this tool kit is indispensable!

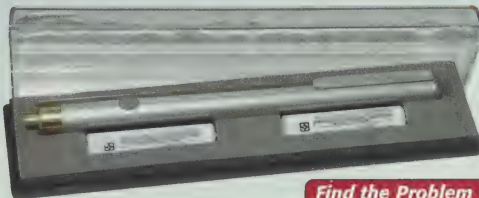
- 2 Long Nose Pliers
- Diagonal Cutting Plier
- Slide Cutting Plier
- Adjustable Wrench
- Professional Multimeter
- Tone Probe Kit
- 7pcs hex key set (inch)
- Punch Down Tool 110 blade
- Electricians Scissors
- Butt Set
- In-Line Modular Adapters 4/6/8 pin in 1
- Electricians Knife
- 8 assorted pro-soft screwdrivers

902125 Communications Maintenance Kit \$379.95

Fiber Optic Laser Tester

- ✓ Accepts ST, SC, FC/PC Connectors
- ✓ Pocket-Sized Pen Design
- ✓ Includes Rugged Carrying Case

New For 2007



Find the Problem - Fast!

Hand-held and battery powered, this tester beams a highly visible red light into your cable, so the problem area lights up brightly!

Great for finding broken or bent patch cords... especially when end-to-end checking would be especially aggravating, such as when the fiber is bunched together or in a ribbon!

Powerful enough to test over 4km of fiber! Fits in your pocket like a regular pen, or in its accompanying carrying case. Runs on two 1.5V AAA batteries (included).

902186 Fiber Optic Laser Tester \$74.95

Two-In-One Ceramic Drivers

- ✓ Non-Inductive
- ✓ Non-Magnetic
- ✓ Thermally/Electrically Insulated
- ✓ Anti-Static

These double-sided ceramic drivers are ideal for working with sensitive electronics. Safe to use when tuning inductors, capacitors, or other sensitive variable components!

Large surface area prevents fragile cores from stripping or breaking! Choose from five different dual-sided sizes below!

- | | | |
|---------|---------------------------------|--------|
| 902-191 | 0.4" x 0.035" and 0.4" x 0.07" | \$7.95 |
| 902-192 | 0.4" x 0.047" and 0.4" x 0.078" | \$7.95 |
| 902-194 | 0.4" x 0.047" and 0.4" x 0.094" | \$7.95 |
| 902-195 | 0.4" x 0.047" and PH1.7 | \$7.95 |
| 902-196 | 0.4" x 0.35" and PHO | \$7.95 |



COM3010 Communications Service Monitor

**Full Duplex, Loaded
With Features...
At A Sensible Price!**

- ✓ 100 kHz to 1.0 GHz, full duplex
- ✓ Built-in power meter & dummy load
- ✓ Built-in frequency counter
- ✓ Built-in sweep generator
- ✓ Built-in SINAD meter
- ✓ Built-in calibrated RSSI meter
- ✓ Built-in RS232 control
- ✓ Built-in Li-Ion battery packs

THE RIGHT CHOICE!

The COM3010 is a full featured communications service monitor engineered and designed to provide highly accurate measurement and monitoring of communications equipment from 100kHz to 1.0GHz with 0.1ppm accuracy. Full duplex design enables independent and separate measurement and testing of transmitter and receiver circuits simultaneously making it the ideal service monitor for the radio technology of today...and tomorrow! All functions are selected with simple commands and selections on the Elastomeric touch key pad and are displayed on high contrast dual vacuum fluorescent graphical displays. For those on-site measurements, all graphical displays can be "zoomed" to full size to see them across the room! And of course, battery operation is standard to make field use a breeze!

BUILT-IN POWER METER, FREQUENCY COUNTER, AND A LOT MORE!

Perfect for the two way radio user. Simply key the transmitter while the radio is connected to the generator output for an instantaneous reading of RF output power in either watts or dBm. Yes, we said key the radio into the generator output! The COM3010 incorporates automatic reverse power protection rated at 100 watts with a built-in dummy load. No more burned up pads, no separate wattmeter, and no more worries. Not sure of the radio frequency? Don't want to plug it into a programmer to interrogate the memory? Even worse, don't want to take it apart to look at the channel elements or crystals? No problem, just key the transmitter. The built-in frequency counter will display the frequency! Counter range is 100kHz to 1.0GHz!

AUTOMATIC SINAD AND RSSI MEASUREMENTS!

Working on a receiver? Check the true SINAD sensitivity of the receiver with the built-in SINAD meter. Also provides audio loop-back for the equipment being tested. A separate SINAD meter is no longer required! It gets even better! A calibrated Receive Signal Strength Indicator meter makes the COM3010 perfect for testing filter designs and performance as well as cable characteristics. Such tests are made simple with the availability of user memories. 100 groups of 100 memories allow the storage of a large number of test setups for quick and easy retrieval. See detailed specifications below. *(In my previous life I was the first to buy a Cushman CE3 and CE5 for two-way use...these were only available then I never would have had to change all those small light bulbs in the dials...all the time!)*

SPECIFICATIONS

FEATURES

- Display: 2 vacuum fluorescent graphical displays, 16x140 pixels
- Memories: 100 sequences of 100 registers plus system memories
- Sweep Features: Linear, octave, and decade of up to 10,000 points
- Scanner Mode: Allows scanning through a sequence of 100 stores
- SINAD Meter: Displays reading from -30dB to 0dB of SINAD
- Freq. Counter: Measures frequency error to 1 Hz. Three counter modes
- Battery Meter: Displays charge left in batteries
- Reverse Protection: Generator output protected, switches into 100W internal load and automatically displays power in dBm or watts
- Power Meter: Displays power from +23dBm to +50dBm, $\pm .5$ dB (200mW-100W)
- Attenuator Output: -30dB sample port from load for external equipment
- RSSI Meter: 80dB of range on receiver side, -40dBm to -120dBm
- Warranty: One-year parts and labor with extended Ramsey Technical Support and dedicated COM3010 user forum access

GENERATE MODE

- Frequency: 100kHz to 1.0GHz in 1Hz steps
- Freq. Accuracy: ± 0.1 ppm standard
- RF Output Level: -140dBm to 0dBm in 0.1dBm steps
- Level Accuracy: ± 1 dB, 500kHz to 1GHz; ± 2 dB 100kHz to 500kHz
- Units: dBm, uV, mV
- Leakage: Better than 1uV, 2 turn loop, 1" diameter at 1"
- Spurious Harmonics: -30dBc typical
- Non-harmonics: -50dBc typical
- FM Modulation: ± 75 kHz max in 0.1Hz steps
- FM Bandwidth: 0.1Hz - 75kHz
- Accuracy: ± 0.1 ppm (inherently tied to reference frequency)
- AM Modulation: 0 - 75% in 1% steps to -100dBm, 0-50% to -140dBm
- AM Bandwidth: 10Hz - 10kHz
- Accuracy: $\pm 5\%$
- Distortion: Less than 5%
- Modulation Internal: 0.1Hz - 3kHz
- Modulation External: 0.1Hz - 3kHz digital and analog selectable, auto leveling.
- CTS Encode: 0.1Hz to 999.9Hz at ± 75 kHz default deviation, variable from .1Hz to 2.5kHz deviation
- DPL Encode: ± 75 kHz, all supported codes
- Two Tone Paging: 0.1Hz - 3kHz, group, voice, tone, battery save modes

RECEIVE MODE

- Frequency: 100kHz to 1.0GHz in 10Hz steps
- Sensitivity: Less than 2uV below 512MHz
Less than 3uV above 512MHz
- FM Demod: 0 - 6kHz, 0 - 4kHz
- AM Demod: 0-100%
- CTS Decode: In AF frequency count
- Frequency Error: 0-1MHz, two methods of bargraph and count
- AF Demod output: 1Vp-p for 5kHz deviation
- Gates: 0.1 sec, 1 sec

FREQUENCY COUNTER

- Frequency Range: 100kHz - 1GHz
- Low Band Sensitivity: Less than 10mV under 70MHz, 1Hz and 10Hz resolutions
- High Band Sensitivity: Less than 10mV, 70MHz - 1GHz, 10Hz and 100Hz resolutions with divide by ten prescaler
- IF Frequency: Receiver sensitivity, range limited to bandwidth of current set receiver frequency ± 10 kHz, 1Hz, and 10Hz resolutions

AUDIO COUNTER

- Frequency Range: 60Hz - 3000Hz
- Gates: 10 Sec variable gate for 1 sec quick updates
- Sensitivity: 35mV at demod audio, (± 750 Hz deviation)

GENERAL

- Receiver input: Has diode protection and fused components
- Controls: Elastomeric keypad
- Dummy Load: 100W 30dB feed-through attenuator with sample port on rear, 25% duty cycle full power
- RS232 Control: Serial interface provides external function control and automated calibration
- Primary power: 100-240VAC, .6A, 50/60Hz; built in Li-Ion battery
- Stand: Standard push to lock handle/stand
- Case Color: Mist gray epoxy powder coat
- Supplied Accessories: 110VAC EIA cord, BNC-BNC test cable, whip antenna, one BP3010 Li-Ion battery
- Dimensions: 6" H x 11.9375" W x 14.75" D (152.4mm H x 303.31mm W x 374.65mm D)
- Weight: 14 lbs (6.5kg)

COM3010
BP3010
CC3010

Communications Service Monitor, 100kHz-1GHz
Additional Li-Ion Battery Pack, Extends Operation by 1 Hour Approx (Max 3 Packs Total)
Matching Black Padded Cordura Carrying Case With Strap

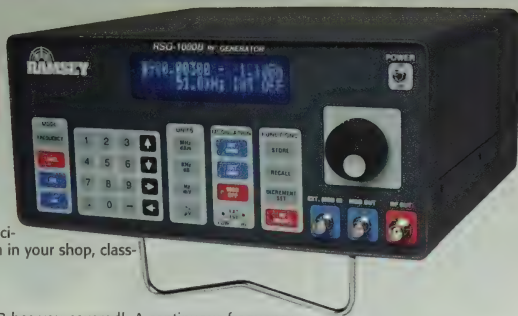
\$3995
\$59
\$129



RSG1000B RF Signal Generator

- ✓ 100 kHz to 1 GHz!
- ✓ 10 Hz continuous tuning
- ✓ AM & FM internal and external modulation
- ✓ 90 user setup memories
- ✓ RS232 interface
- ✓ 0.1ppm stability

**A 1 GHz Professional RF
Signal Generator At A
Price That Can't Be Beat!**



EXCELLENT VALUE AND PERFORMANCE!

The RSG1000B RF Signal Generator was designed from the ground up to fill the need for a high performance lab quality signal generator at an economical price. How do you do that? It's simple...remove the "bells and whistles" that aren't needed, and maintain the critical lab quality specifications. The result is a highly versatile RF signal generator that is not only perfect for any bench in your shop, classroom, or home, but also small enough for use on the road!

BROADBAND OPERATION!

If you're looking for an RF signal generator with the broadest range of frequencies, the RSG1000B has you covered! A continuous frequency range of 100 kHz to 1,000 MHz takes care of any application you may have. And this is provided at a variable output level range from -130 dBm to +10 dBm at 50 ohms! Output can be CW, FM, or AM modulated. An internal 1 kHz modulation source is derived from the reference to provide AM modulation up to 75% in 0.1 kHz steps, and FM deviation up to 99.9 kHz in 0.1 kHz steps. External 600 ohm modulation inputs are provided for both AM and FM modulation! A modulation output also provides a buffered 600 ohm output for monitoring the current modulation source (internal, external, or both).

HIGHLY ACCURATE & STABLE!

The precision frequency synthesizer is referenced to an internal 0.1ppm 50 MHz TCXO time base. No expensive high stability options are required here; this ultra precision time base comes standard with the RSG1000B! In addition, an external 10 MHz external time base input is provided to lock to an external reference. Automatic switching is provided when a proper 10 MHz reference is detected!

RF INPUT PROTECTED!

RF on/off (inhibit) is provided through an RF output relay. An RF-On LED is illuminated when RF output is present on the output connector. RF output is automatically inhibited upon power-up. When reverse RF power is detected at the RF output connector at a level greater than +26 dBm, the protection circuit opens the RF output relay and displays a reverse RF power detected indicator. No more damage from inadvertent transmitter connections!

DETAILED SPECIFICATIONS (at 0dBm output level)

RF SECTION

Frequency Range:	100kHz to 1,000 MHz
Resolution:	10Hz continuous tuning
Oscillator Frequency:	50MHz TCXO
Oscillator Stability:	±0.1ppm from 15°C to 35°C
Harmonics:	-30dBc typical
Non-Harmonics:	-50dBc typical
Residual FM:	5 Hz typical, 0.3 to 3 KHz detection BW
Residual AM:	-60dBc (>10KHz from carrier) 0.3 to 3 KHz detection BW
Output Level:	-130 to +10dBm (50 Ohms); Resolution: 0.1dB
Level Accuracy:	±1dB (>500 KHz)
Level Units:	dBm, dBmV, mV, dBµV, µV
Reverse Power Protect:	25 watts, 50 VDC
Leakage:	1µV (2 turn loop, 1 inch diameter, 1 inch distance)

FREQUENCY MODULATION

Range:	0-99.9KHz in 0.1 KHz steps
Accuracy:	±5% of scale
Freq. Response:	50Hz to 25KHz
Max. Deviation:	99.9KHz; except 250 to 500MHz, 50KHz

AMPLITUDE MODULATION

Depth:	0-75% in 1% steps <0 dBm
Distortion:	Less than 5%
Accuracy:	±5%
Freq. Response:	50Hz to 15KHz
Modulation Sources:	Internal 1KHz derived from reference. External - 600 ohm impedance with level LEDs to indicate correct 1 Volt p-p input level

GENERAL

Front Panel:	Sealed membrane with audio acknowledgment
Display:	Two line, vacuum fluorescent display
RS-232:	RS-232 interface provides polled readout plus downloading and uploading of all front panel setups
Memory:	90 full front panel set-ups. 9 series of 10 memories each. 10 year retention
External Timebase Input:	10MHz, 1 Volt p-p
Power Requirements:	90 to 230 VAC ±10%, 50/60Hz
Dimensions:	12" w x 6" h x 12" d
Weight:	11 lbs.

EASY TO USE!

We designed the operation of the RSG1000B to be simple and intuitive to the technician. The display is a bright two line vacuum fluorescent display that can be seen across the room! All operating parameters are displayed. An easy to use numeric membrane keypad enables direct entry of all values. All functions are accessible without using a "shift" or second function key for real ease of use. In addition we designed in a "smart knob" dial which has a true analog feel but is intelligently enabled when entering or changing parameters in any field.

NON VOLATILE EEPROM MEMORIES!

The RSG1000B features 90 user accessible memories! Each of these memories will store a complete front panel setup including the increment settings. To store a front panel setting to memory you simply press the Store key. Memories can be recalled via the up/down keypads or with the Smart Knob. Memories are stored in the non-volatile EEPROM with a data retention of 10 years!

RS232 REMOTE CONTROL!

The RSG1000B can be remotely controlled through a standard DB-9 RS232 serial connection on the rear panel. The signal generator is addressable and the address can be set to any number between 0 and 255. This means that up to 256 units can be connected to the same RS232 port. The interface supports polled readings plus download and upload of all setup memories. Commands can be uploaded individually or as an ASCII file from any terminal program or com port.

COMPACT SIZE, WORLDWIDE USE!

At 12" x 6" x 12" the RSG1000B is suitable not only for bench and lab use but for mobile applications. It makes a great field service tool and a very stable field local oscillator reference! And at 11 lbs it's a breeze to carry with you. A universal switching power supply operates on 90 to 230VAC, 50/60 Hz for use anywhere! A convenient swivel tilt-bail stand is included on the bottom of the RSG1000B to give you tilt view when in use that can easily be folded up for travel and storage.

If you are looking for a cost effective way to test receivers AND transmitters, check out our COM3010 communications service monitor on page 76. Features the same broadband range of the RSG1000B with a complete receiver, power meter, frequency counter, sweep generator, SINAD meter, RSSI meter, and a whole lot more...for a whole lot less!

COST EFFECTIVE!

As many schools and technical institutes have told us, they get 90% of the performance of a \$20,000 RF signal generator for 10% of the price! Economically it simply makes sense! If you're looking for great features in an RF signal generator without breaking the bank...or your budget, the RSG1000B is for you! On the other hand, if you're looking for useless bells and whistles, extra buttons, interfaces you will never use, and love wasting your money...I guess we can't help you! (The very first RSG1000B that came off of production went to an antique radio museum that needed a long sought-after, cost effective way to test radios. How cool is that!)



STE RF Shielded Test Enclosures

- ✓ Wireless device testing!
- ✓ Forensics Isolation!
- ✓ Perfect for 802.11a, b, g, n, WiMAX
- ✓ Cellular, PCS, GSM, 3G testing
- ✓ 802.15, Bluetooth®, Wibree, RFID, ZigBee testing
- ✓ Wide variety of I/O options are "standard"!
- ✓ Super isolation up to 18 GHz!
- ✓ RF radiating test fixture models for absolute repeatability testing of wireless devices!
- ✓ Stock models to fit your custom applications!



**Trust YOUR RF Testing To
Our Proven
Patented Design!**

THE RF SCREEN ROOM ON YOUR BENCH!

In 1997 Ramsey took the technician out of the large expensive shielded screen room and put his hands and eyes into a portable benchtop RF Shielded Test Enclosure. With thousands placed in service worldwide the patented STE technology became the standard for efficient and cost effective RF isolation testing. That legacy has continued with a wide variety of STE's to suit every RF test application and the size requirements you have today. Our exclusive double lip gasket technology assures an RF tight seal each and every time. Steady-hold hinges maintain the opening at any location and prevent gasket compression due to prolonged closure pressure when not in use. Our STE2800 and STE3800 STE's feature our RTF Radiating Test Fixture with a built-in broadband antenna to properly test wireless communications devices with guaranteed repeatability. All of the STE's feature a wide variety of available I/O connection and interface options and RF filtered feed-throughs. All available to fit your custom requirements with the pricing and delivery of a stock unit!

STE2200

The "Portable Test Box" or STE2200 evolved from its big brother the STE3000B. Designed specifically for TDMA, CDMA, AMPS, PCS, GSM and other small communication devices, it is constructed to the same precision-machined tolerances as our patented STE3000B to maintain an exceptionally well shielded environment. Heavy duty, rugged .090 and .125 aluminum is used throughout and our double lip, high performance gaskets are used at all joint locations assuring a reliable RF tight closure. Oversized hinges and latches are used to provide a physically tight seal every time. RF absorbent foam lines the interior to provide a typical RF attenuation of -90dB @ 3GHz! Perfect for 2.4GHz testing. Input/output connections and options can be configured to match your needs.

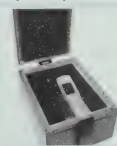


MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE2200	<ul style="list-style-type: none"> • RF absorbent foam liner • Exclusive double lip RF tight gasket • Easy release handle • Steady-hold hinge • Designed for compact devices 	None provided standard. Custom configured, see options below.	-100dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz	4 1/2" H x 7 1/4" W x 9 3/4" D 3 1/4" H x 6" W x 8 1/2" D (Nom. Inside Dimensions)	\$439.00

STE2800

Designed around the STE2200, we took the task of repeatability testing of TDMA, CDMA, AMPS, PCS and GSM phones, and other wireless communications to a new level! For more than a decade Ramsey's RTF Radiating Test Fixture was the standard in pager testing and alignment. Now, designed specifically for such communications devices, the RTF has a built-in embedded antenna to cover 800 MHz to 8 GHz.

A heavy duty universal clamp system allows any phone to be securely clamped into position for testing. Once clamped in, the flat coupling response, together with the high RF isolation factor, gives you guaranteed repeatability testing. Phone to phone, the measurements will be exact, and will be taken under the identical conditions. An SMA connector is provided standard on the STE2800 for the RTF antenna connection. Other I/O connector options may be ordered separately. For a compact highly reliable enclosure with reliable and repeatable device coupling, the STE2800 is your answer!

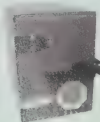


MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE2800	<ul style="list-style-type: none"> • Integral RF radiating test fixture (RTF) • Flat Coupling Factor 800MHz - 8 GHz • Provides absolute repeatability testing • Exclusive double lip RF tight gasket • RF absorbent foam liner • Easy release handle • Steady-hold hinge 	SMA to built-in RTF antenna provided standard. Additional connectors available, see options below.	-100dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz	4 1/2" H x 7 1/4" W x 9 3/4" D 3" H x 6" W x 8 1/2" D (Nom. Inside Dimensions Above RTF)	\$959.00

STE2900

Our broad line of STE series Shielded Test Enclosures were already being used for virtually all wireless LAN device tests. But the daunting task was how to streamline the testing, while reducing the physical space required for simultaneous high volume testing. Our engineers started to work with a number of manufacturers to find out exactly what was needed.

Wow... multiple boards, blades, WAPS and other devices had to be physically mounted in close proximity. They couldn't "talk to each other", they couldn't "talk to the outside world", they had to run cool within their published specs in a small confined space over a long period of time, there needed to be suitable filtered I/O connections, RF feed throughs, RF isolation was critical, and there had to be a lot of them running simultaneously in a small lab. Pretty tall wish list. But once again, Ramsey came through...with flying colors! Also available in dual rack mount and shock mounted road case versions!



MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE2900	<ul style="list-style-type: none"> • Designed for WLAN testing • Front loading swing away door • Dual ventilation or fan forced cooling • Exclusive double lip RF tight gasket • Universal I/O connector interface plate • RF absorbent foam liner • Optional security locking latch available 	None provided standard. Custom configured, see options below.	-90dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz	11" H x 8" W x 14" D 10" H x 7" W x 13" D (Nom. Inside Dimensions)	\$995.00

STE2902

If you're looking for the ultimate test enclosure system for your dense pack test environment, the STE2902 is your answer! Designed for space saving 19" rack mounting, the STE2902 contains TWO STE2900 WLAN test enclosures in one single 7 rack unit (12 1/4" high) package! The integrated custom rack shelf provides mounting and support for use in your standard 19" racks. Front loading doors swing away to the left for easy installation and access to your DUT. Also available in a shock mounted road case for easy travel and setup.

MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE2902	<ul style="list-style-type: none"> Dual rack mount configuration Designed for WLAN testing Front loading swing away doors Dual ventilation or fan forced cooling Exclusive double lip RF tight gaskets Universal I/O connector interface plates RF absorbent foam liner Optional security locking latches available 	<p>None provided standard.</p> <p>Custom configured, see options below.</p>	<p>-90dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz</p>	<p>12.2"H x 19"W x 17.4"D 10"H x 7"W x 13"D (Nom. Inside Dimensions per chamber)</p>	\$2,095.00

STE2902C

A large number of manufacturers requested a dual rack mount test system in a stand alone package. This was for benchtop and field use, where existing 19" rack cabinets were not available. We took our highly popular STE2902 dual WLAN test enclosure and installed it in a high impact shock road case! This provided not only a self contained test system, but a convenient method to ship the STE2900 system! Special rear mount supports are included to withstand shipping and road abuse. As a plus, the shock cases are "keyed" on the top and bottom to provide locked stacking of multiple units. All this in a case that measures 19.2" high!

MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE2902C	<ul style="list-style-type: none"> Dual rack mount shock case configuration Designed for WLAN testing Front loading swing away doors Dual ventilation or fan forced cooling Exclusive double lip RF tight gaskets Universal I/O connector interface plates RF absorbent foam liner Optional security locking latches available 	<p>None provided standard.</p> <p>Custom configured, see options below.</p>	<p>-90dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz</p>	<p>19.25"H x 25"W x 22.5"D 10"H x 7"W x 13"D (Nom. Inside Dimensions per chamber)</p>	\$2,395.00

STE3000B

The RF Test Enclosure that started it all! How do you troubleshoot, tune, align, and test a device in an RF free and interference free environment? Well, up until now you had to invest in a very expensive RF screen room. Our patented STE3000B brought that technology right down to your bench, and the cost all the way down to affordable!

Now you can work and see inside the box rather than sit inside an expensive screen room. Working access is made possible with our custom designed silver impregnated, ultra fine mesh gloves. These gloves offer an RF tight seal to the box yet give you excellent manual dexterity and hands on access to devices under test. Once the cover is closed, a large RF tight viewing window overlooks the entire working area that is illuminated with built-in noise free lighting. It doesn't get much easier than that! All I/O connections and options are milled into a removable 304 stainless steel panel to allow for future changes. Simply choose the I/O's and interfaces you require when ordering, and the STE3000B will be custom designed to your spec. Sounds too good to be true? We thought so too; that's why we have a patent on it!

MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE3000B	<ul style="list-style-type: none"> RF absorbent foam liner Exclusive double lip RF tight gasket Universal I/O connector interface plate RF tight "hands-on" silver mesh gloves RF tight illuminated viewing window Gas filled cover strut Designed for hands-on adjustment and alignment of devices 	<p>6 pole filtered 120VAC AC outlet strip; 6 pole filtered barrier strip feedthrough.</p> <p>Custom configured, see options below</p>	<p>-90dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz</p>	<p>12 3/4"H x 18"W x 12"D 8"H x 16 3/4"W x 10 1/2"D (Nom. Inside Dimensions)</p>	\$1,095.00

STE3000F

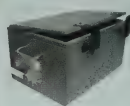
Just as Ramsey led the field in RF isolation test products for pager, two way, cellular, PCS, and WLAN testing, we were right there to support the forensic industry in their requirements for data isolation and collection of wireless communications devices! Forensic investigation of cell phones, PDAs, and other hand-held wireless devices specifically requires complete hands-on manipulation of the wireless device to identify and extract data while maintaining complete RF isolation from the outside world. We started with our patented STE3000B enclosure with two RF isolated hands-on gloves to provide complete hands-on access to the device. Viewing of the device is provided through the RF isolated illuminated viewing window. A RF filtered 6 outlet internal power strip is included to maintain power to the DUT throughout test and observation to prevent possible loss of data. From there, we pre-customized the enclosure for the typical forensic application. We included an RF filtered RS-232 serial bulkhead feedthrough connector and an RF filtered USB 1.1 data port bulkhead feedthrough to give you data access to the wireless device under test or observation. Additional I/O connectors may be ordered to suite your specific needs. Looking for the standard in forensic testing? We have you covered.

MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE3000F	<ul style="list-style-type: none"> Designed specifically for forensic wireless device isolation and data retrieval RF absorbent foam liner Exclusive double lip RF tight gasket Universal I/O connector interface plate RF tight "hands-on" silver mesh gloves RF tight illuminated viewing window Gas filled cover strut 	<p>6 pole filtered 120VAC AC outlet strip; 6 pole filtered barrier strip feedthrough, filtered RS-232 serial feedthrough, filtered USB 1.1 feedthrough</p> <p>Additional connectors available, see options below.</p>	<p>-90dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz</p>	<p>12 3/4"H x 18"W x 12"D 8"H x 16 3/4"W x 10 1/2"D (Nom. Inside Dimensions)</p>	\$1,395.00

**STE3300**

Designed from the ground up to be functional, fast, and convenient for the design, production, testing, and maintenance of wireless LAN, Bluetooth, and other microwave frequency applications. Durability is assured because the STE3300 is constructed of rugged .090 and .125 aluminum with dual heavy-duty latches.

Unmatched RF isolation is achieved by the use of the two rows of high performance flexible RF gaskets. The entire interior is lined with RF absorbent foam that provides 24dB reflective attenuation to eliminate nulls and hotspots. The inside working space is large enough to test your devices as a complete system or use multiple enclosures to eliminate interference between work stations. A large variety of connector options are available for specific customer applications. All connectors are milled into a removable 304 stainless steel panel to allow for future requirements when needed.

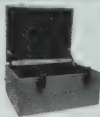


MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE3300	<ul style="list-style-type: none"> RF absorbent foam liner Exclusive double lip RF tight gasket Universal I/O connector interface plate Easy release latch system Steady-hold hinge system Designed to test complete systems 	None provided standard. Custom configured, see options below.	-90dB @ 2GHz -90dB @ 4GHz -80dB @ 6GHz	9 3/4" H x 18" W x 12" D 8 1/4" H x 16 3/4" W x 10 3/4" D (Nom. Inside Dimensions)	\$829.00

STE3500

Designed specifically for Wireless Communications circuit board production testing where there is a need for a large footprint for isolating oversized boards and minimal height to allow for easy device placement. The lid opens automatically using the internally mounted dual precision air pistons once the dual heavy duty latches are released.

Construction meets the same standards as our popular STE3300 and incorporates the same double gasketed lid to provide the highest attenuation factor at the best value. The I/O panel is located close to the bottom of the rear panel to keep the cabling as close to the device under test as possible. All connectors are milled into a removable 304 stainless steel panel to allow for future requirements when needed.

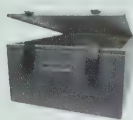


MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE3500	<ul style="list-style-type: none"> RF absorbent foam liner Exclusive double lip RF tight gasket Universal I/O connector interface plate Easy release latch system Dual gas filled cover struts Designed to test complete systems 	None provided standard. Custom configured, see options below.	-90dB @ 2GHz -90dB @ 4GHz -80dB @ 6GHz	9" H x 17" W x 17" D 8 1/2" H x 18 3/4" W x 15 3/4" D (Nom. Inside Dimensions)	\$1,095.00

STE3600

One of our newest RF test enclosures designed for complete laptop integrated WLAN and Bluetooth testing. It's large 16" W x 24" D is designed to be either desktop mounted or to be integrated on a standard 19" sliding rack shelf. Dual gas struts provide easy top cover lifting for full top access to insert the largest laptop computer inside for RF isolated tests and measurements. A front handle is included to assist in carrying the STE as well as front rack mount sliding.

Construction meets the same standards as our popular STE3300 and incorporates our exclusive double RF gasketed cover to provide the highest attenuation available. The universal I/O panel is located on the rear of the enclosure to provide easy cabling inside sliding rack mount installations. For full size laptop testing and measurement, the STE3600 has been designed to make your life a lot easier!



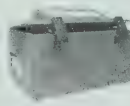
MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE3600	<ul style="list-style-type: none"> Designed for wide format laptops and other large scale wireless equipment RF absorbent foam liner Exclusive double lip RF tight gasket Universal I/O connector interface plate Easy release latch system Dual gas filled cover struts Dual ventilation or fan forced cooling 	None provided standard. Custom configured, see options below.	-90dB @ 2GHz -90dB @ 4GHz -80dB @ 6GHz	12" H x 17" W x 24" D 11" H x 16" W x 23" D (Nom. Inside Dimensions)	\$1,495.00

STE3800

If you are looking for the ultimate enclosure for TDMA, CDMA, AMPS, PCS, GMS, P2T, PDA, and other wireless communications devices the STE3800 is the enclosure for you. The STE3800 is configured with a built-in Ramsey RTF Radiating Test Fixture to give you flawless go/no-go testing with guaranteed repeatability.

It is designed around the STE3300 to give you a whopping 5 1/2" H x 15 1/4" W x 9 1/4" D inside working space. The RTF provides a broadband coupling response from 800 MHz all the way up to 8 GHz. The heavy duty universal clamp system positions and holds the device under test in an exact position that can be easily duplicated for repeatability. Because frequent tests require the operator to visually inspect the device display (cell phone, PCS phone, etc.), the STE3800 features a large RF tight viewing window that overlooks the entire working area. The entire display and any indicators, LED's etc. located on the device can easily be seen throughout the test process!

Double thickness 24dB RF absorbent foam lines the entire work area for a flat response. As with the STE3300, double row RF gaskets are used to provide RF isolation up -90dB at 4GHz. A Type-N female connector is provided standard for the RTF antenna connection, and is located on the removable 304 stainless steel I/O panel that can be custom configured with any available I/O options.

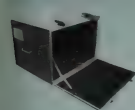


MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE3800	<ul style="list-style-type: none"> Integral RF radiating test fixture (RTF) Flat Coupling Factor 800MHz - 8 GHz Provides absolute repeatability testing RF tight illuminated viewing window to see device displays and indicators 1" RF absorbent foam liner for a flat-ter response Exclusive double lip RF tight gasket Universal I/O connector interface plate 	Type-N to built-in RTF antenna provided standard. Additional connectors available, see options below.	-90dB @ 2GHz -90dB @ 4GHz -80dB @ 6GHz	12 3/4" H x 16" W x 12" D 5 1/2" H x 15 1/4" W x 9 1/4" D (Nom. Inside Dimensions Above RTF)	\$1,995.00

STE4400

High performance RF test enclosure specifically engineered for the production floor! Designed to the same exacting specifications of the STE3300, the STE4400 offers a unique swing-down front door opening for easy device placement and removal. Easily accommodates a laptop computer to fit any test application.

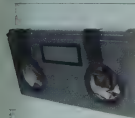
Extra deep work space accommodates the largest devices. Like the STE3300, your custom I/O configuration is milled into a removable 304 stainless steel panel to allow for future requirements when needed, giving you off the shelf delivery of your custom order!



MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE4400	<ul style="list-style-type: none"> RF absorbent foam liner Exclusive double lip RF tight gasket Universal I/O connector interface plate Large hinge-down front door Designed for your own test fixtures 	<p>None provided standard.</p> <p>Custom configured, see options below.</p>	<p>-90dB @ 2GHz</p> <p>-90dB @ 4GHz</p> <p>-80dB @ 6GHz</p>	<p>15 1/2" H x 22 1/2" W x 19" D</p> <p>14 1/4" H x 21 1/4" W x 17 1/2" D (Nom. Inside Dimensions)</p>	\$1,595.00

STE4500

The popularity of the STE4400's larger size along with the patented hands-on manipulability of the STE3000B brought you the STE4500! The exclusive RF tight hands-on silver mesh gloves and illuminated viewing window are integral to the large 22.5" W x 18" H wide front of the enclosure. Dual gas filled struts hold the hinged top open for easy access for the largest devices, including laptops! Like other STE series enclosures, a universal stainless steel I/O connector interface plate is used to provide you any combinations of "custom" milled connectors and I/O's that you may require. See the options below.



MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE4500	<ul style="list-style-type: none"> Designed for hands-on manipulation of larger devices under test Exclusive double lip RF tight gasket Universal I/O connector interface plate RF tight "hands-on" silver mesh gloves RF tight illuminated viewing window Dual gas filled cover struts 	<p>None provided standard.</p> <p>Custom configured, see options below.</p>	<p>-90dB @ 2GHz</p> <p>-90dB @ 4GHz</p> <p>-80dB @ 6GHz</p>	<p>19" H x 22 1/2" W x 15 1/2" D</p> <p>18" H x 21 1/4" W x 14" D (Nom. Inside Dimensions)</p>	\$2,245.00

STE5000

The STE5000 enclosure represents a breakthrough in RF shielded enclosure design and value. The enclosure is roomy enough to hold even 19" rack sized instruments and provides -110dB of shielding, enabling one to test anywhere in your facility!

The box is constructed of type 304 stainless steel and lined with microwave absorbent foam. Our unique double lip gasketed closure maintains maximum shielding while allowing a full 24" x 18" opening. Heavy-duty hinges and latches plus interior bracing insures the physical integrity of the enclosure. RF attenuation is -110 dB at 1GHz, and -80dB at 18GHz! A 3.5" x 6" precision machined removable 304 stainless steel panel has been integrated into the design of the enclosure. Also available with our exclusive RF Tight illuminated viewing window in the STE5100.



MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE5000	<ul style="list-style-type: none"> Designed for full size and rack mounted equipment testing RF absorbent foam liner Exclusive double lip RF tight gasket Universal I/O connector interface plate Large sturdy stainless construction 	<p>None provided standard.</p> <p>Custom configured, see options below.</p>	<p>-110dB @ 1GHz</p> <p>-100dB @ 3GHz</p> <p>-95dB @ 6GHz</p> <p>-80dB @ 18GHz</p>	<p>19" H x 25" W x 25" D</p> <p>17 1/2" H x 23 1/2" W x 23 1/2" D (Nom. Inside Dimensions)</p>	\$3,495.00

STE5100

The stainless steel STE5000 set records for both equipment compatibility and reliability in a high volume manufacturers environment. Designed to fit the largest equipment inside for rock solid EMI and RF isolated tests and measurements. Built to the same design specifications as the STE5000 above, the STE5100 also includes our exclusive illuminated RF tight viewing window on the front door. Now you can see indicators, displays, and screens on your DUT inside the STE while the tests are underway. Critically important for laptops, wireless terminals, and other devices that must be seen under test.



MODEL	FEATURES	CONNECTORS	ISOLATION	DIMENSIONS	COST
STE5100	<ul style="list-style-type: none"> RF tight illuminated viewing window to see device displays and indicators Large sturdy stainless construction Designed for full size and rack mounted equipment testing with visual displays 	<p>None provided standard.</p> <p>Custom configured, see options below.</p>	<p>-110dB @ 1GHz</p> <p>-100dB @ 3GHz</p> <p>-95dB @ 6GHz</p> <p>-80dB @ 18GHz</p>	<p>19" H x 25" W x 25" D</p> <p>17 1/2" H x 23 1/2" W x 23 1/2" D (Nom. Inside Dimensions)</p>	\$3,995.00

CUSTOM CONFIGURATION OPTIONS

RF Feedthrough:	BNC, TNC, SMA, SMB, UHF, Type-N
Fiber Optic:	Fiber optic bulkhead feedthrough
Dust Covers:	Dust cover caps with security chains available for all RF feedthrough connectors
RF Filtered Data:	DB9 (10pF), DB9 (100pF), DB9 (1000pF), DB15 (100pF), DB15 (1000pF), DB25 (1000pF), DB37 (1000pF), RJ45/DB9 Filtered, RJ11/DB9 Filtered, USB/DB9 Filtered
Power Connections:	4-Pole filtered power strip, 6-Pole filtered power strip, surge protected power strips
Ventilation Options:	Dual side mounted RF filtered vents with single filtered exhaust muffin fan
RF Safety Inhibit Option:	Provides RF relay to automatically switch circuit to internal load when cover is opened
RF Absorbent Foam:	Standard 1/2" thick RF absorbent foam liner provides 24 dB attenuation. 1" thick foam is standard on the STE3800 and available as an option to provide a flatter response
Fiber Transceiver:	S.I. Tech USB 2.0 Fiber Transceiver System available for devices up to 480 Mb/s

Note: RF Isolation specs are measured at 1M with terminated RF feedthrough coaxial connectors installed. Actual isolation & attenuation can be affected by adding additional filtered and non-filtered connectors. Check with Ramsey for specific connector specifications.

AMPS, CDMA, TDMA, PCS, GSM, 3G, RFID, PDA, ZigBee, Bluetooth®, Wibree, 802.11a, b, g, n, WiFi, WiMAX, WLAN, PCMCIA, USB, QNC, P2T, Forensics, Flex®, Reflex®, POCSAG, Golay... **YOU NAME IT, WE'VE GOT YOU ISOLATED!**



50 Watt FM Stereo Transmitter

- ✓ 50W RF output, continuous duty
- ✓ FCC Certified under parts 2, 73, and 74
- ✓ Automatic monitoring
- ✓ Automatic VSWR protection
- ✓ Automatic temperature protection
- ✓ Automatic battery backup
- ✓ Digital display of all parameters
- ✓ Runs on 85 to 264 VAC primary power
- ✓ Super efficient yet quiet forced air cooling
- ✓ Only two rack units high

TOP
SELLER!

Stay On-The-Air With The PX50!

 R: 100.9MHz
 L: 100.9MHz
General Display
(Default)
 VSWR: 1.14
 F: 39.1W R: 1.1W
Audio
Levels
 R: 12.2dB
 L: 12.2dB
Antenna System
VSWR
 R: 12.2dB
 L: 12.2dB
Internal
Temperature
 Adj Freq: 100.9MHz
 Lock: Yes VCO: 5.4V
VCO Deviation
Levels
 100%+1
 100%+1
Audio
Levels
 Adj Freq: 100.9MHz
 Lock: Yes VCO: 5.4V
RF
Frequency
 Sel. Pur: 48.0W c
 Meas Pur: 38.8W
RF Output
Power
 Adjust mode:
 Mode: Stereo
Stereo/Mono
Mode
 Station ID:
 RRANSEY
Station
ID
 [J]Auto Power: Off
 [J]Power Protect: On
Option
Display
 R: 100.9MHz
 L: 100.9MHz
Controls
Locked/Unlocked

WHAT DO YOU WANT IN A TRANSMITTER?

We asked LPFM licensees and users what they really wanted and needed in an FM stereo transmitter. We listened to a lot of current customers already using our very popular PX1 transmitter about features they would like. And we even listened to people using competitive equipment telling us what they really wanted!

WE LISTENED!

What did we hear? You wanted an ultra-reliable transmitter that had automatic protection circuits that would keep you on the air rather than shut you down. You asked for constant diagnostics on all critical circuits and functions. You wanted to use it anywhere in the world, regardless of input voltage or frequency plan. You wanted to have automatic battery backup to eliminate costly standbys by generators. You asked for more power than 35 watts but wanted it to run extremely cool while remaining extremely quiet. You wanted full digital display of all functions, parameters, settings and alarms.

FCC CERTIFIED!

And because of the confusion with the FCC equipment requirements you wanted an FCC CERTIFIED transmitter, not just a verified transmitter. You told us what you wanted...CONSIDER IT DONE! The PX50 Professional LPFM transmitter, designed specifically to YOUR specs!

SIMPLE TO INSTALL AND OPERATE!

Operation of the PX50 is simple and intuitive via the front panel navigation switch matrix. All functions, controls, and status are displayed on the 2 line by 20 character vacuum fluorescent display. Installation of the PX50 is a breeze. A standard Type-N connection is provided for RF Output. Balanced (XLR) left and right audio inputs are provided to properly interface with any audio source you have. In addition, BNC SCA/Digital/RDS inputs are provided along with a quick disconnect connector for a 12 VDC standby/back-up power input. In short, connect your audio sources and antenna, power it up, set frequency and power level via the front panel navigation switch matrix, and you're on the air! It doesn't get any simpler!

FULL FRONT PANEL MONITORING

Operation of the PX50 is simple and intuitive via the front panel switch matrix. All functions, controls, and status are displayed on the 2 line by 20 character vacuum fluorescent display.

SPECIFICATIONS

Frequency Range:	87.5 to 108.1 MHz
Primary Power Input:	85-264 VAC, 47-63 Hz; 120-370 VDC
Backup Power Input:	12-14 VDC
Broadcast Modes:	Stereo/Mono + SCA and Digital RDS Inputs.
Bandwidth:	±75 kHz when properly adjusted, auto adjust feature prevents overmodulation.
Separation:	Better than 50 dB (typical 60-70 dB)
Crosstalk:	Better than 50 dB.
Asynchronous:	Better than 60 dB.
THD:	Better than 0.3% with processing.
Audio Inputs:	Standard Balanced Inputs +4 dBu/1.228V rms/3.47 V p-p; -10 to +10 dBm range.
Audio Input Impedance:	22K Ohms
SCA and Digital Inputs:	BNC (50 Ohms)
RF Output:	50W Continuous into a 50 ohm load. Fully adjustable from 1 watt to full power.
Harmonic Suppression:	Better than -81 dBc
Display:	2 lines x 20 characters vacuum fluorescent display.
Controls:	5 navigation controls (Up, Down, Left, Right, Enter)
Cooling:	High CFM Fan, dual filtered front intake, rear exhaust.
Over-Power Protection:	Continuously checks for proper power output to within 5%.
VSWR Protection:	Continuous VSWR monitoring, controlled via Power Reduction On Error and Power Restoration Timer settings.
Over-Temperature Protection:	Auto over-temperature control, 70°C max. fixed, controlled via Power Reduction On Error and Power Restoration Timer settings.
Auto Power Reduction On Error:	Automatically reduces power output to 85%, 75%, 50%, 25% or full disable of set power level.
Auto Power Restoration Timer:	Sets the time interval for automatic error checking to clear reduced power modes and to restore full set power level.
Overmodulation Protection:	Auto control of audio modulation levels, on/off.
Audio Frequency Range:	20 Hz to 16 kHz ±1 dB. Steep "brick wall" 16 kHz low phase shift, low pass filter, down 68 dB @ 19 kHz and above.
Adjustments:	Audio input levels, Modulation Level, Power Level, Frequency (in 100 kHz steps), Stereo/Mono mode, Auto Adjust Modulation mode (On/Off)
Regulatory Approval:	Meets or exceeds FCC 47CFR Parts 15.107(b), 15.109(b); FCC CERTIFIED FCC 47CFR Parts 2, 73, and 74 (ID: PF3PX50)
Dimensions:	Standard 2-unit rack-mount case, 19" wide, 14.25" deep, 3.5" high.

(Note: The end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body in regards to the application and use of the PX50).



FM Broadcast Complete "Station-In-A-Box"

- ✓ 50W RF output continuous duty transmitter!
- ✓ FCC Certified under parts 2, 73, and 74
- ✓ Your choice of cases!
- ✓ Your choice of integrated mixers!
- ✓ Your choice of integrated audio production equipment!
- ✓ Antenna and coax included
- ✓ Installed and factory prewired to your configuration!
- ✓ Get on the air quick

New For 2007...Greater Choice Of Configurations CUSTOMIZE YOUR STATION WITHOUT THE HASSLE!

LPFM licensees, overseas customers, and municipal customers often need a way to quickly "get on the air" at either temporary locations or in the interim to their installed studio transmitter locations. A number of overseas customers also had to originate short term programming from various remote origination sites for disaster preparedness broadcasts! In fact, a number of PXB's were immediately deployed to the Hurricane Katrina areas to broadcast instructions and disaster relief information! Well, there you go...a Radio Station In-A-Box! Each PXB is factory prewired and tested, and ready to go on the air the moment it is received!

The PXB50 became extremely popular last year and continues to be the quick and easy Station In-A-Box to get you on the air quickly. All PXB50 series packages feature our FCC Certified PX50 transmitter which is packed with automatic features to keep you on the air 24/7 (Check out the PX50 specs on the previous page.) Although extremely popular, customers frequently requested additional features. So we took their suggestions, sat down with our production engineers, and developed a new series of PXB packages to meet all of your requirements!

First, for road transport use a dual shock impact case was frequently requested. Consider that done with the addition of a new 8 and 12 rack unit dual shock insulated road cases. The original non-shock impact 6 rack mount case is still available for stationary applications.

Next issue was the ability to play multiple format audio sources, play MP3's, record CD's on standard CD-R/RW format, play/record cassettes, and a lot more. Our engineers took a long look at these requests and came up with a nice assortment of suitable equipment to complement the PXB series. Each piece of equipment and each combination was installed in new cases and burned in for several months to assure ultimate uptime reliability in regards to RF and heat. Only problem? Not everybody's needs are the same so we decided to provide several common PXB configurations as well as a bare-bones RF only package so you can customize your own audio production equipment.

Last year the PXB51 and PXB52 were the first of two next generation PXB's for 2006. To survive rugged road travel and deployment we installed it in a high impact resistant, shock isolated, 8 or 12 unit rack case. Unlike the original PX50, the new case is literally a rack case shock suspended within a case, made for the toughest abuse you can put it through! Then we equipped it with the latest audio production and broadcast support equipment. However, technology improves constantly, equipment is upgraded, and for 2007 we introduce the new PXB53!

We took our extremely popular PXB51 and re-equipped it for the optimum user compatibility and performance based the latest equipment available today. We started by adding the brand new Tascam CC222MKII, the successor to the CC222MKI. New features were added plus it gave you not only the ability to play and record CD's, CD-R's, CD-RW's but also MP3 data CD's, with no need for a separate playback unit. That was the #1 request from our customers, and Tascam took care it with flying colors! We then added a Tascam bi-directional professional cassette player that features direct one-touch dubbing from cassette to CD-R or vice versa! Then we found that you desired an easy to use DJ audio mixer to make it easy for your "Talent" or operators to get on the air quick. We added the award winning Tascam X15 DJ audio mixer. It even features a gooseneck microphone on the front panel for immediate "on-air" live broadcasts. In addition, a standard professional dynamic broadcast quality microphone, desk stand, and 25' XLR cables are included.

As in previous PXB units, we also include our extremely popular FMA200 5/8 wave colinear vertical FM broadcast antenna and 100' of LMR400 low loss transmission line pre-connectorized for a simple antenna connection. As in all PXB configurations, a professional dynamic microphone, desk stand, and a 25' XLR microphone cable are also included. All of this is prewired and tested and is ready to use the moment it's received! Need specialized equipment to meet your specific broadcast needs? Not a problem with Ramsey! Visit www.ramseyfm.com for details, or give a call! Note, all PXB series are 120VAC/60Hz. 220VAC/50Hz export versions are available on special order, contact Ramsey for details and pricing.

250 and 500 Watt PXB Series Station-In-A-Box series now available! Visit www.ramseyfm.com or call for details!



PXB50 FM STEREO TRANSMITTER IN A BOX

- PX50 FCC Certified FM Stereo Transmitter
- PAC750 Superscope CD/Cassette player multi channel mixer, (see www.ramseyfm.com for details)
- FMA200 5/8 Wave 3.4dBi gain FM antenna, easy to install and tune to your frequency, 100' LMR400 low loss coax

All installed in a standard 6 rack unit road case, provided with a broadcast quality dynamic microphone and XLR cable



PXB53 LIVE ORIGINATION FM STEREO TRANSMITTER IN A BOX

- PX50 FCC Certified FM Stereo Transmitter
- X15 Tascam DJ audio mixer, 8 channels, gooseneck microphone, (see www.ramseyfm.com for details)
- CC222 Tascam CD/CD-R/RW/Cassette Integrated recorder/MP3 player, (see www.ramseyfm.com for details)
- 2 R/U 2 blank rack units for your specialized equipment, (see www.ramseyfm.com for details)
- FMA200 5/8 Wave 3.4dBi gain FM antenna, easy to install and tune to your frequency, 100' LMR400 low loss coax

All installed in an 12 rack unit shock isolated road case, provided with a broadcast quality dynamic microphone and XLR cable

New For 2007

PXB50	Standard FM Stereo Transmitter In A Box, 110VAC Operation	\$3995.00
PXB53	Live Origination FM Stereo Transmitter In A Box, 110VAC Operation	\$4995.00
PXB5008	Basic FM Stereo Transmitter In A Box, RF Only, 8 Rack Shock Isolated Road Case	\$2895.00
PXB5012	Basic FM Stereo Transmitter In A Box, RF Only, 12 Rack Shock Isolated Road Case	\$2995.00

RAMSEY...Your One-Stop Source For Your Broadcast FM Needs!

250W Transmitters, 500W Transmitters, Antennas, Production Equipment, Mixers, Audio Amplifiers, Editors, Monitors, and MUCH MORE!

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ramsey BROADCAST

**It All
Won't Fit
In This Catalog!**

Our goal at Ramsey is to be the one-stop shop for Low Power and Ad Hoc broadcasters. From LPFM to portable FM "Stations-In-A-Box", from low power Ad Hoc TV transmitters to DVB wireless video, we want to offer you the latest technology available! With systems in operation around the world, our proven reliability has been the one most significant factor in our growth!

Visit us on line for our latest and greatest equipment values. We are committed to provide the most economical broadcast solution with proven reliability...we will have it no other way!

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- ✓ Studio Accessories
- ✓ Audio Support Equipment
- ✓ Custom OEM Configurations

FM broadcast transmitters, antennas, and all the accessories you will ever need to get your station on the air and keep it on the air!

www.ramseyfm.com

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- ✓ TV Stations-In-A-Box
- ✓ TV Transmitters
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- ✓ DVB-S Systems
- ✓ MPEG Distribution
- ✓ Studio Equipment & Accy's

TV broadcast transmitters, antennas, and the latest in VHF/UHF, DVB equipment and TV accessories!

www.ramseytv.com

Or Call... 800-446-2295



Tascam X15 DJ Professional Mixer

- ✓ 8 stereo channel sources, 6 line level, 2 phono
- ✓ 2 mic inputs, one front panel XLR/TRS combo
- ✓ 4 channel mixer
- ✓ 3-band EQ per channel
- ✓ Fader start on all four channels
- ✓ Balanced XLR and unbalanced RCA master outputs
- ✓ Replaceable VCA crossfader
- ✓ Booth & record outputs with level control
- ✓ Selectable headphone output with level control
- ✓ Front panel 12V light output
- ✓ 19" rack mounted, 4 rack units high

The User Friendly And Professional DJ Mixer!

If you're looking for a truly professional yet inexpensive multi-input mixer for your FM broadcast station, or for standard DJ mixer applications, the Tascam X15 is the answer. We have searched out all professional mixers for just the right one for our professional FM customers. Easy to use, easy to set up, and most importantly, rugged to withstand portable "haul around" applications. The Tascam X series DJ mixers ranked as number 1 in our choice...and in our testing! We have made these mixers integral components in our PXB series of FM Stations-In-A Box. They have also become the most popular DJ mixers for music presentations, shows, weddings and other audio mixer applications.

The X15 is a value packed mixer that provides 8 stereo channel sources that are front panel selectable from 6 line level and 2 phone inputs. Any combination of these inputs has full level control, EQ, cue and fader controls on the front panel. In addition, there are two selectable microphone inputs that also feature EQ and on/off front panel control. A unique combination XLR/TRS balanced input connector on the front panel for the main microphone is ideal for direct plug in gooseneck mics as well as standard microphone cables without having to access the connector panel. A user replaceable cross-fader mixes from the A-B sources, and dual LED bargraph meters display master program output levels. All of this is housed in a space saving 19" rack panel that is only 4 rack units high! Recessed top rear panel connections make connecting the X15 a breeze in your road case, rack enclosure, or your custom desktop.

If you are looking for even more deluxe features to jazz up your production capabilities, check out the X17 below. In addition to the features above, it features effects, audio sampler with pitch control, and numerous additional inputs, outputs, and features. Operates on 110VAC power supply included. 220VAC/50Hz available as a special order. For additional information, visit our pro audio website at www.ramseyaudio.com.

X15
3R9580

Professional DJ Audio Mixer
Replacement Cross-Fader

\$299.95
\$24.95

Tascam X17 DJ Professional Mixer

- ✓ 8 switchable stereo channel sources
- ✓ 4 switchable line phono or line, 4 dedicated line
- ✓ 2 mic inputs, one front panel XLR/TRS combo
- ✓ 3 bank audio sampler with pitch control
- ✓ Front panel compact flash card for store & record
- ✓ Effects send and return
- ✓ Separate stereo AUX input with level control
- ✓ Discrete aux output
- ✓ Booth dimmer
- ✓ 4 channel mixer
- ✓ 3-band EQ per channel
- ✓ Fader start on all four channels
- ✓ Balanced XLR and unbalanced RCA master outputs
- ✓ Replaceable VCA crossfader
- ✓ Booth & record outputs with level control
- ✓ Selectable headphone output with level control
- ✓ 19" rack mounted, 4 rack units high



Audio Sampler, Store/Record, Effects...And More!

OK, so you're looking for not only the best value packed professional mixer available, but you want even more features! Consider it done with the Tascam X17! As we described above, we searched out a LOT of mixers to include with our FM transmitter systems, and the X15 was the winner for value and performance. But then we evaluated, tested, and burned in the X17 and our jaws dropped! Stereo inputs are expanded to provide 4 selectable line level/phono inputs as well as 4 dedicated line only inputs. If you are going to have numerous line level sources (tape decks, CD players, DVD players, etc.) these additional inputs will certainly come in handy. Not only for the broadcaster but for the DJ performing at live events. Just imagine the flexibility being able to connect all those auxiliary sources!

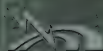
But it doesn't stop there. Unique to the X17 is the high tech audio sampler and effects circuit. This provides 3 banks of audio samples that can be stored and played back from its internal memory! Plus, there is a front panel slot for a standard compact flash card to store and retain your sample audio tracks. The memory size is only limited by the size of the CF card you use, and we know those are getting bigger and bigger every day! Front panel selectable source inputs, pitch, and level is provided. Yes, you can adjust the pitch of the source for numerous effects!

Additional features include a separate stereo AUX input and output, booth dimmer, EFX send and return, separate record outputs, and much more. For only a few bucks more you get all these additional features. The X17 really represents today's technology at a truly affordable price. If you're ready to take your mobile audio production to the next level, the X17 can get you there! Operates on 110VAC power supply included. 220VAC/50Hz available as a special order. For additional information, visit our pro audio website at www.ramseyaudio.com.

X17
3R9580

Professional Deluxe DJ Audio Mixer With Effects
Replacement Cross-Fader

\$499.95
\$24.95



Tascam Audio/Video Mixer Amplifier

- ✓ 5 channel with level, EQ, and faders
- ✓ 4 microphone inputs with phantom power
- ✓ 100 watt built-in audio amplifier
- ✓ Balanced line out, unbalanced monitor out
- ✓ Automatic microphone ducking
- ✓ XLR and screw terminal mic connections
- ✓ RCA unbalanced line level inputs
- ✓ RS232, RS422, RS485 serial control
- ✓ Relay control connector (DB37)
- ✓ Aux video switching
- ✓ "Learning" full function IR remote control
- ✓ 19" rack mounted, 3 rack units high
- ✓ And a whole lot more!

Multiple Selectable Aux Inputs, 100W Amplifier Out, And Much More!

One of the most common requests we've had for our FM Station-In-A-Box configuration has been to provide a high power audio output to directly drive local speakers. This is popular for local setups, meetings, and other events. Whether it's for the DJ at a club, a Town Meeting, or a disaster recovery application, the FM transmitter gets the signal out there but what about the group of people on site? Meeting that need brought the additional need for multiple audio inputs that could easily be connected to anything from a Walkman to a cassette deck or CD Player. Just like the X series mixers on the previous page, we searched and searched and found the EXACT match for what was needed!

The Tascam AV452 is primarily designed to be a "presentation A/V mixer amplifier", however it perfectly matches the Station-In-A-Box application! Plus it does a whole lot more. There are 4 microphone inputs that can be connected via standard XLR or wire screw-on connectors. This makes it easy to connect in the field. On top of that, each input has the capability of providing phantom power for the latest electret condenser microphones. Each microphone input has own level, EQ, mute, and over-level LED indicator. The neatest feature is the 5th input. There are 5 separate stereo balanced inputs that can be selected for that 5th input. That means you can have a CD player, cassette deck, or Walkman plugged in that merely need to be selected and then faded in. It really doesn't get much easier than that.

Besides both balanced and unbalanced line level outputs it also provides a hefty 100 watt per channel audio output for local speakers! Amps can be configured for stereo or mono bridge, and have enable/disable touch switches on the front panel! If you're looking for a super-agile mixer/amplifier in one unit for your FM station or your portable Station-In-A-Box, the AV452 is the perfect choice.

Besides the application for our FM broadcast stations, the AV452 also switches video, S-Video, and VGA video input, and has advanced presentation features including intercom, cascade inputs, serial control, relay control, IR advanced learning remote control, and much more. Operates on 110VAC. 220VAC/50Hz available as a special order. For full specifications and additional information, visit our pro audio website at www.ramseyaudio.com.

AV452 Professional A/V Mixer Amplifier

\$699.95



Ashly Stereo Audio Power Amplifiers

New For 2007

- ✓ 75 or 150 watts per channel stereo
- ✓ 150 or 300 watts bridged mono
- ✓ 2 or 4 channel models available
- ✓ Front panel headphone jack
- ✓ Small single rack unit height
- ✓ Remote power on/off
- ✓ Adjustable turn-on delay (up to 8 seconds)
- ✓ Signal to noise (20Hz-20kHz, unweighted): greater than 98dB
- ✓ Frequency response (20Hz-20kHz): $\pm 1.0\text{dB}$

Small Size, High Power Output To Drive Local Speakers

As mentioned above, the most common request by our FM transmitter customers was to provide a quality studio monitor. Besides an integrated mixer amplifier (AV452 above) we felt a separate audio amplifier was needed for those with different configurations lacking a built-in amplifier. Now, let's talk about amplifiers for a moment. There are a lot of audio power amplifiers out there. And a lot of them seem to be an incredible bang for the buck with you first look at them. But audio power amplifiers have to run continuous duty, often at their max, and need to survive... that's where the buck stops! At Ramsey we don't just sell any product or brand merely because it's out there, we first test it, run it through engineering to verify specifications, and then burn it in to assure US that it will survive for YOU! After all, our FM transmitters are in use around the world in some of the most severe environments. Audio amplifiers need to be as reliable as our transmitters... we insist on it!

The Ashly SRA2075 is great for the small studio or portable broadcaster thanks to their rugged construction, low power requirements and efficient operation. These amplifiers include a switch-mode-power supply and Class-D amplifier circuitry, providing a compact, light-weight, and power-efficient solution. They are also convection-cooled, with no noisy fans. Perfect for the "quiet" all-in-one studio/equipment room applications! Plus, these amplifiers are made right here in Rochester, NY by Ashly Audio, Inc., a world renowned manufacturer of high quality audio products for over 30 years! When you need an amplifier to work in any environment without question, these are your answer.

On the front panel, you've got level attenuators for each channel, signal present and clip alert status LEDs, and a stereo headphone jack, so no need to mess around behind your rack all the time. Extensive automatic protection includes: output overcurrent protection, DC output protection, supply rail overvoltage protection, high temperature protection, inrush limiting, and mains fuse. 3-pin Euroblock inputs/screw terminal outputs. Operates on 120/240VAC (internally switchable). Also available in 4 channel and 150 watt versions, all in a single rack unit. For full specifications, visit our pro audio website at www.ramseyaudio.com.

SRA2075	Professional Stereo Audio Power Amplifier, 75 watts, Two Channel	\$449.95
SRA4150	Professional Stereo Audio Power Amplifier, 150 watts, Four Channel	\$629.95
SRA2150	Professional Stereo Audio Power Amplifier, 150 watts, Two Channel	\$524.95
SRA4150	Professional Stereo Audio Power Amplifier, 150 watts, Four Channel	\$714.95



Tascam 1 Rack Unit Pro CD/MP3 Player

- ✓ Plays CD's, CD-R/RW's, 12cm, and 18cm CD's and MP3's!
- ✓ 20 second RAM buffer for shock protection
- ✓ S/PDIF optical digital output
- ✓ Unbalanced RCA analog outputs
- ✓ $\pm 12\%$ pitch control
- ✓ Key Original mode to change speed without pitch
- ✓ RS232 serial control
- ✓ One 19" single rack unit



When You Need It All... In ONE RACK UNIT!

The CD01U is a top-of-the-line full featured CD and MP3 audio player that still manages to fit in only one rack unit! A perfect addition to one of our custom station-in-a-box units, or drop it into your existing setup and experience the power and versatility of professional quality CD playback. Tascam's patented slot-loading transports mean years of trouble-free use! Includes handy features like $\pm 12\%$ pitch control, speed change without pitch shift, auto ready, auto cue, call, track programming and editing, fade-in, fade-out, time switching, event start/stop, eject blocking to prevent accidental ejection during play, and much, much more!

Analog stereo unbalanced outputs are brought out to standard RCA connectors for simple connections. In addition, an optical SPDIF digital output is provided. RS232 serial control is provided, and is fully compatible with AMX and Crestron remote programming equipment. Operates on 110VAC. 220VAC available as a special order. For additional information, visit our pro audio website at www.ramseyaudio.com.

CD01U Professional CD-MP3 Player, Single Rack Unit

\$499.95



New For 2007

Tascam Professional CD/MP3 Player

- ✓ CD, CD-R/RW, and MP3 playback
- ✓ Single Repeat, all repeat, and folder repeat (Repeat Album) for MP3 CDs
- ✓ Optical and Coaxial S/PDIF digital output
- ✓ RCA unbalanced analog outputs
- ✓ 40 second Electronic Shock Protection (ESP)
- ✓ Headphone output with level control
- ✓ $\pm 12\%$ pitch control
- ✓ Intro Check
- ✓ Shuffle play and program play modes
- ✓ 19" rack mounted, 2 rack units high

The Industry Standard... Just Got Better!

Tascam's industry-standard CD160 gets an upgrade! The C160 was already the most widely used professional CD player on the market, but the newly available CD160MKII adds invaluable new features like MP3 playback and both optical and coaxial digital outputs. Extremely affordable price-point means you can add professional CD and MP3 CD playback to your FM station without breaking the bank!

The C160MKII fits in two standard rack units. If your rack space is limited, or you need balanced outputs, check out the CD01U above. Operates on 110VAC. 220VAC/50Hz available as a special order. For full specifications visit our pro audio website at www.ramseyaudio.com.

CD160MKII Professional CD/MP3 Player, 2 Rack Units

\$278.95

Tascam CD/Cassette Combo Player

- ✓ Integrated CD player and reversible cassette deck!
- ✓ RCA unbalanced inputs and outputs (CDA500 & CDA700)
- ✓ XLR balanced inputs and outputs (CDA700)
- ✓ $\pm 12\%$ pitch control for cassette (CDA500)
- ✓ $\pm 12\%$ pitch control for CD and cassette (CDA700)
- ✓ S/PDIF digital CD player output (CDA700)
- ✓ Parallel control port (CDA700)
- ✓ CD sync feature
- ✓ Continuous play between cassette and CD
- ✓ 19" rack mounted, 3 rack units high

The Cost Effective Solution For CD and Tape!

If you need to save space, and you need a professional cassette deck and a CD player, the CDA series decks have come to your rescue! And are extremely affordable besides! They are also available in unbalanced or balanced audio models!

These CD/cassette combo players take the two most popular consumer audio formats and combine them into an attractive package that delivers both functionality and value. The CDA series include handy features like an easy-to-read front panel display to keep track of your audio, and a front mounted headphone jack for easy previewing. Don't want to sit in front of your rig to control playback? No problem, a full-featured wireless remote comes standard! Playback can be continuous from deck to deck in either direction, making this unit invaluable in long play systems. In addition to broadcasting and DJing applications, the CDA series also makes the process of duplicating entire CDs or individual tracks to cassette easier than ever! The CD sync feature will give you perfect tape duplicates every time. The CDA500 will meet the needs of most amateur broadcasters and DJ's, but for audio professionals or anyone who needs balanced outputs, the CDA700 will be your machine of choice. With the CDA700 you get combined XLR balanced outputs for cassette and CD playback, dedicated CD XLR outputs, S/PDIF digital CD output, parallel port control, and $\pm 12\%$ pitch adjustment on cassette and CD player! (The CDA500 offers pitch adjustment on cassette playback only). Operates on 110VAC. 220VAC/50Hz available as a special order. If are looking for a CD/cassette combo with MP3 playback and CD-R/RW recording capabilities, check out the CC222MKIII on the following page.



CDA700 rear panel with balanced XLR inputs and outputs

CDA500 Professional CD/Cassette Combo Player, RCA Unbalanced I/O's

\$374.95

CDA700 Professional CD/Cassette Combo Player, XLR Balanced & RCA Unbalanced I/O's

\$524.95



New For 2007

Tascam CD Recorder-Cassette Combo

- ✓ Records and plays standard CD-R and CD-RW's!
- ✓ MP3 playback with directory navigation!
- ✓ S/PDIF coax and optical digital I/O's!
- ✓ Copy protection recording
- ✓ RIAA phono input for turntables
- ✓ Bi-directional cassette deck
- ✓ $\pm 12\%$ pitch control on cassette deck
- ✓ Unbalanced RCA I/O for CD-R deck
- ✓ Headphone out with level control
- ✓ Auto dub from cassette to CD-R/CD-RW
- ✓ Auto dub from CD-R/RW deck to cassette
- ✓ Fade-in, fade-out recording features!
- ✓ 19" rack mounted, 3 rack units high
- ✓ Much, much more!

The Ultimate! Plays Cassettes, Plays CD's, Plays CD-R/RW's, Plays MP3 Discs... AND RECORDS CD'S!

The miracle answer to the FM broadcaster just got even better! There is an obvious need for both a CD player and a cassette deck to support your program material source. But having separate units takes space, takes connections, and quite often that's an option you don't have. Now, in only three rack units, you can have BOTH! A professional bi-directional cassette deck as well as a professional CD player! But wait, it goes even further! What if the CD player also RECORDS CD's on STANDARD CD-R and CD-RW format? The CK222MKIII did all that, so how can it get any better? How about solving the last missing link... playback of MP3 CD's! That's right, the new CK222MKIII now plays MP3 CD's complete with display navigation through the MP3 directories!

That's not all that's new. Power-On play automatically starts CD playback when power is applied for installed or unattended systems. Optical as well as coaxial digital inputs and outputs are also provided. In addition the new Time Track Increment feature automatically adds a CD track ID every few minutes (adjustable from 1 to 10 minute increments), which is great for event recording. It can also add a track marker when the signal drops below a certain level, or when the record button is pressed.

The CK222MKIII provides all the playback functions of cassette, MP3 disc, commercial CD, CD-R and CD-RW media. Professional cassette features include $\pm 12\%$ pitch control, bi-directional transport, Dolby B noise reduction, return to zero, record mute, repeat modes and much more. The professional CD-R/RW deck features a 24 bit digital to analog and analog to digital converter, sampling frequency converter, manual and automatic track divisions, one-touch fade in's, finalize, erase, edit, and a whole lot more. Multiple inputs provide for any combination from digital direct to dub pass-through. Recorded CD's can even be copy protected as FREE (can be copied), 1 GEN (single generation copies only), and PROH (copy prohibited)!

In addition to source recording on CD-R's, CD-RW's, and cassettes you can also directly DUB from cassette to CD-R/RW or CD-R/RW to cassette with one touch dubbing with direct pass through audio! Auto track creation-division is selectable for CD-R/RW's based on cassette audio pauses! S/PDIF digital inputs and outputs are provided for BOTH coaxial and optical. Analog inputs and outputs for cassette, CD-R/RW, and both are provided via standard unbalanced RCA connectors. RIAA phono input with ground is also provided eliminating the need for an external phono preamplifier. Operates on 110VAC. 220VAC/50Hz available as a special order. What else can be said? A lot, but it's difficult to cram the information from the 36 page operating manual into this space so check our pro audio website at www.ramseyaudio.com for full details and specifications!

CK222MKIII

Professional CD Recorder-Cassette Combo Deck

\$799.95

Tascam CD Recorder-MP3 Player

- ✓ Records and plays standard CD-R's and CD-RW's!
- ✓ MP3 playback with directory navigation!
- ✓ Key Original, changes playback speed without changing pitch!
- ✓ $\pm 16\%$ pitch control in 0.1% steps
- ✓ Fade-in, fade-out recording features!
- ✓ PS/2 keyboard input for CD text and naming tracks
- ✓ Auto track increment by level with trim
- ✓ Un-finalize function for CD-RW's
- ✓ Automatic Power-on play
- ✓ RCA unbalanced audio inputs and outputs
- ✓ S/PDIF coax and optical digital I/O's
- ✓ 19" rack mounted, 2 rack units high



Now The Best Just Became... "More Best"!



The Tascam CDRW900 is an updated version of Tascam's CDRW750, which was the most popular CD recorder on the market... until now! The CDRW900 adds indispensable features like MP3 playback, pitch and key control, keyboard input, and more! MP3 playback reads ID3 tags for track name displays, and features directory navigation. Sample rate conversion makes it easy to record CD's. Since audio CDs must be recorded at 44.1kHz, the CD-RW900 offers sample rate conversion for the digital input. This allows a 48kHz recording session from a digital console, computer DAW system or DAT recorder to be recorded to CD without converting to analog and back to digital. Naturally, the converter can be defeated for a pure digital signal path for digital signals that don't need conversion. With digital level adjustment the digital signal input of the CDRW900 can be adjusted as easily as the analog signal level. The PS/2 keyboard input allows the user to name tracks while recording. It also provides keyboard shortcuts to commonly used recording features.

Up to 16% pitch control during playback, plus a Key Original feature that lets you change the playback speed without changing the pitch! Unbalanced RCA analog inputs and outputs are provided as are coaxial and optical digital inputs and outputs! Like all Tascam products, the CDRW900 was designed with usability in mind, because a good interface is the most important "feature" there is! Operates on 110VAC. 220VAC/50Hz available as a special order. For additional information, visit our pro audio website www.ramseyaudio.com.

CDRW900

Professional CD Recorder-MP3 Player

\$549.95



The Quintessential High-Definition Digital Recorder!

PRO-LEVEL FEATURES, AMATEUR ACCESSIBLE PRICE!

The TASCAM DV-RA1000HD is your best bet for high-resolution mixdown, mastering and event recording! It supports recording to CD, DVD or hard disk media at up to 192kHz/24-bit PCM resolution. Like its predecessor, the DV-RA1000, it also records Direct Stream Digital audio, Sony's revolutionary format created for Super Audio CDs. These are the only devices to offer Direct Stream Digital recording for under \$10,000, making the format attainable for audiophile archival and professional studio mixdown!

DVD+RW RECORDING AND PLENTY OF ONBOARD STORAGE FOR HOURS OF ULTRA-HIGH QUALITY AUDIO!

The DV-RA1000HD includes real-time effects such as multiband compression, DSP, and EQ. Its USB 2.0 jack allows it to be used as a DVD+RW drive when connected to a Mac or Windows computer - just plug and play (or rather, plug and record!) Its rear panel is also jam packed with all the connections professionals demand. You can record direct to CD-R/W and even DVD+RW media for hours of better-than-CD quality storage! However, even the high capacity of DVD+RW media can only handle around five hours of top quality audio -- That's where the DV-RA1000HD's built-in 60GB hard drive comes in! With it, you have more than 60 hours of uncompressed high definition recording and storage at your fingertips! Designed for recording studio mixdown, audiophile archival, live recording and installed sound, you can trust the DV-RA1000HD with your most treasured master recordings.

ALL THESE FEATURES, PLUS A POWERFUL AND EASY-TO-USE INTERFACE!

Tascam is known for the high-quality and user-friendly interfaces on their hardware and the DVRA1000HD continues that tradition. The sleek and attractive 2-rack unit high front panel has a headphone jack, level control, timer control, power switch, and transport control. The open/close selector for the disc tray doubles as a shut-down button for DVD recording. Above that, bright status lights and LEDs indicate PCM or DSD recording modes. The "Ready" button doubles as a pause key, and when it is pressed together with Play, the data wheel can be used to scrub the audio for editing straight from the unit! That means no need to fire up the computer, as most normal editing tasks can be performed from the DVRA1000HD itself. The Mute button is a smart key that latches when engaged quickly, and can also be held down to engage a non-latch mode for longer periods of silence. Track-skip reverse and forward keys double as 10x search fast forward/reverse when held down. A spacious and easy-to-see LCD screen on the front panel displays dBfs level meter, input and clock assignments, media type, sampling rate, bit rate, total tracks, and current track number and time. Programmable function keys mean you can set up shortcuts to menu operations however YOU want! An included RC-RA1000 remote control offers one-touch accessibility for many functions that are otherwise found in onscreen menus. The remote plugs in to the recorder with a detachable 12-foot cable and requires no batteries. Since there are so many features, Tascam has included a well written user manual that is comprehensive while still being easy-to-read!

A FULL ARRAY OF BALANCED AND UNBALANCED I/O, PLUS DIGITAL DSD IN AND CLOCK-SYNC!

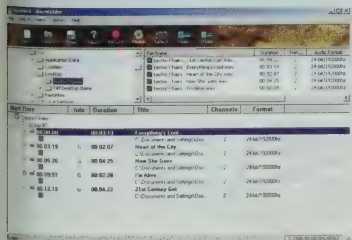
On the back of the DVRA1000HD you will find analog inputs and outputs for either RCA or balanced XLR pairs. For digital I/O, S/PDIF and AES/EBU jacks are provided for double-wire formats. It also supports double-speed, single-wire connections at 88.2 and 96kHz. Two pairs of BNC jacks (one for SDFI-3 and one for DSD-raw) are used for digital DSD recording. The USB 2.0 jack allows the DVRA1000HD to act as a data drive on any computer, reading from all recordable CD and DVD media and recording DVD-R single and dual-layer discs, as well as complete access to the unit's 60GB internal drive. Also on the rear panel are word-clock in/out/thru and a 9-pin RS232-C jack for use with remote control systems like Creston and AMX.

YOUR RECORDINGS HAVE NEVER SOUNDED BETTER!

Because it includes above-average converters, the DVRA1000HD also doubles an amazing-sounding audio playback unit. Compared to consumer CD players, the Tascam DVRA1000HD gives you the awesome benefits of improved resolution and superior digital/analog conversion. You will notice improved depth and subtlety from any 16-bit recording! The included EQ program is easy-to-use and gives you great sound with no distortion. Another excellent feature is the output level control at the end of the effects chain, allowing for smooth fades without quantization or zipper noise.

INCLUDED SOFTWARE LETS YOU HARNESS THE AMAZING QUALITY OF SONY DSD!

As an added bonus, software especially created for the DV-RA1000HD is included! Tascam and Minnetonka Audio Software have teamed up to bring users an exclusive version of Minnetonka's award-winning DiscWelder DVD-Audio creation software. DiscWelder Bronze 1000, available for free to all registered DV-RA1000HD owners, adds three useful audio mastering features to professional and amateur studios looking to do more with their high-resolution recordings. First, the software will convert from Direct Stream Digital (DSD) audio to a PCM WAVE file that can be imported into any DAW software. Second, the software allows users to burn a DVD-Audio disc with up to 192kHz/24-bit stereo mixes. Also included in the software is the ability to create a DVD disc that will play on any DVD player - not just those set up for DVD-A playback. "The DV-RA1000HD puts DSD recording - the best-sounding digital recording format available - within the reach of anyone," says John Larabee, Director of Sales for Tascam. "Now, powered by Minnetonka's authoring software, owners of the DV-RA1000HD can record and archive in DSD format, and then distribute their material in any resolution or format needed. DiscWelder Bronze 1000 allows DV-RA1000HD users to convert their DSD files to WAVE files at any resolution for use in DAW and mastering software like Pro Tools, WaveLab, Peak and others. In addition to that, artists can now burn either DVD-Audio discs of their mixes or burn standard DVD discs which can be played in any of the millions of DVD players in the world!" Audiophiles know that DSD/Super Audio is the format of choice for maximum definition. The DVRA1000 series combined with the included DiscWelder Bronze 1000 software is the most affordable way to get the next generation of recording quality into your studio setup!



Minnetonka's Tascam Special Edition DiscWelder Bronze 1000 is included free with the DVRA1000HD!

Tascam Dual Well Cassette Deck

- ✓ Dual auto reverse
- ✓ $\pm 12\%$ pitch control on tape deck 1
- ✓ Front mic input with level control
- ✓ Dolby B noise reduction
- ✓ Power on play and record
- ✓ Continuous recording
- ✓ Synchro reverse dubbing
- ✓ Blank scan, intro check, and timer playback
- ✓ Normal and high speed dubbing
- ✓ 19" rack mounted, 3 rack units high

New For 2007



The Latest... New For 2007!

The 202MKIV is the next generation of dual well decks from Tascam. Replacing the 202MKIII from last year's Ramsey catalog, the 202MKIV has all the features of the 102MKII, plus an additional tape deck and loads of new dual-deck recording features! Continuous playback and recording are great features for uninterrupted long-term recording. The deck will automatically switch to the second tape when the first one finishes playing/recording! Parallel recording is also available to easily make multiple recordings of the same source, and the high-speed dubbing feature uses internal pass-through audio for unrivaled quality. "Synchro-Reverse Dubbing" is a unique feature of the 202MKIV that will allow you to dub from shorter tapes to longer tapes or vice-versa without problems. If your source tape finishes a side before the destination tape, the source tape will stop and the destination tape will automatically record silence until it finishes its side. When the destination tape switches sides, the source tape will automatically resume playback and the destination tape resumes recording. Operates on 110VAC. 220VAC/50Hz available as a special order. For full specifications visit our pro audio website at www.ramseyaudio.com.

202MKIV

Professional Dual Well Cassette Deck

\$399.95



Tascam Single Well Cassette Deck

- ✓ Dolby B and C with HX Pro headroom extension
- ✓ "Intro Check" plays beginning of each song
- ✓ Record Mute function for setting song spacing
- ✓ Unbalanced RCA Analog I/O
- ✓ Headphone Output
- ✓ Electronic Tape Counter
- ✓ Two heads
- ✓ 19" rack mounted, 3 rack units high

When You Just Need A Good Cassette Deck That Will Last!

The most widely used source for LPFM broadcasting is audio cassette. They have been around a long time and are still heavily used throughout the industry. Quite often the FM broadcaster is forced to use a consumer cassette deck for his program source. Sure, they work, but they often experience track alignment problems, sub-par audio response, and their headlife is poor at best. After all, consumer units are made for occasional playback and not for everyday use! Now you can have a super professional rack mounted cassette deck for close to the cost of these consumer units!

The 102MKII single well deck is the best value and choice for broadcasters, musicians, schools, and theaters for cassette playback and recording. Dual heads are provided for erase and record/playback. Front panel display includes dual peak level meters, tape counter, transport mode indicators, record/play indicators, CD sync indicator, and pause indicator. Record mute records 4 seconds of silence between your audio "tracks" to allow automatic music search functions of most cassette players. Intro check scans through the entire tape playing a short section at the beginning of each "track" allowing you to find the track you're searching for. Front panel input level and balance controls are provided as well as a standard headphone monitor jack. Operates on 110VAC. 220VAC/50Hz available as a special order. For full specifications, visit our pro audio website at www.ramseyelectronics.com.

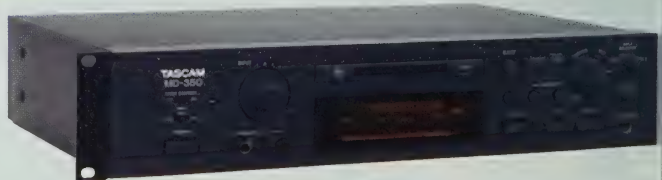
102MKII

Professional Single Well Cassette Deck

\$319.95

Tascam Advanced MiniDisc Recorder/Player

- ✓ Balanced XLR and Unbalanced RCA Analog I/O
- ✓ S/PDIF Optical I/O
- ✓ Front Panel Optical Input
- ✓ Auto Ready Function (Play One Track & Pause)
- ✓ Auto Cue Function (Cue to First Audio in Track)
- ✓ Pitch Control
- ✓ Headphone Output w/ Level Control
- ✓ 74 Minute Stereo & 148 Minute Mono Record Modes
- ✓ RC-32 Wireless Remote Included
- ✓ ATRAC v3
- ✓ Timer Play Function
- ✓ Program and Shuffle Play Modes
- ✓ Complete TOC Editing for Changing Track Order



The Best MiniDisc Unit Around!

MiniDisc has long been the standard for quality live recordings thanks to the compact size and high quality of MiniDisc media. The MD-350 incorporates the latest advancements in MD technology, including the latest ATRAC encoding scheme (version 3) which features new long play versions with up to 320 minutes of record time on a standard 80 minute MiniDisc! The MD350 is completely user friendly, and gives you total control with a front panel PS/2 keyboard port for easy editing of the MiniDisc's TOC (Table of Contents) and track names!

A complete array of audio I/O makes integrating the MD-350 into any system easy. It features balanced and unbalanced analog ports are available, plus digital optical port. A front panel optical port can also be used to connect portable players digitally without having to get behind your rack. The MD350 fits into two rack units and includes a wireless remote for easy control. For full specifications visit our website at www.ramseyaudio.com.

MD350

Advanced MiniDisc Recorder/Player

\$469.95



Tascam Portable Hi-Resolution Recorder

- ✓ Stereo recording to Compact Flash media
- ✓ 44.1kHz to 192kHz recording resolution at 16- or 24-bit
- ✓ Time-stamped Broadcast WAVE file format is easily imported into DAW software and spotted into projects with sample accuracy
- ✓ Retake button allows user to re-do last recording with a single button press
- ✓ Audio files continually re-saved to safeguard against data loss
- ✓ Comprehensive system and transport control from the front panel or a PS/2 keyboard
- ✓ XLR mic inputs with phantom power and analog peak limiter
- ✓ Unbalanced stereo RCA I/O
- ✓ S/PDIF digital I/O
- ✓ Headphone output
- ✓ Built-in mono microphone and speaker for desktop interview applications
- ✓ Analog level controls for easy operation without the need to look at the unit
- ✓ FireWire interface for fast data transfer to a computer
- ✓ SMPTE/LTC timecode input on locking XLR balanced jack
- ✓ Timestamps Broadcast WAVE recordings from SMPTE input
- ✓ Chase locks to incoming SMPTE timecode
- ✓ Video clock input resolves to house clock
- ✓ Tri-level sync support for HDTV applications
- ✓ Includes Frame Lock, Lock and Release and flexible FreeWheel settings for unpredictable timecode sources
- ✓ Pull-up and Pull-down sample rates included for video format compatibility



On Location Recording Made Easy...And Professional!

The TASCAM HD-P2 Portable High-Definition Stereo Audio Recorder is a mind-blowing professional solution for challenging live and on-location recording! Records at up to 192kHz/24-bit resolution to Compact Flash media, and its audio files are instantly available to DAWs through the built-in high-speed FireWire computer connection. Unlike consumer MP3 sketchpads, the professional HD-P2 incorporates high-end features like a SMPTE timecode input for synchronization to external devices while in record or playback. The user interface is designed for fast and intuitive use under stressful one-take-only situations, and its large, angled LCD is perfect for any application from over-the-shoulder location recording to concert recording and commercial use.

The shoulder-slung design of the HD-P2 with its included locking strap makes it a natural choice for film production recording. The Compact Flash media is safely recessed and latched to prevent accidental ejection, and audio can be recorded locked to timecode and video reference for absolute lock. It runs for approximately 5.5 hours on AA alkaline batteries, and weighs less than two pounds with batteries installed.

The HD-P2 is perfect for live music recording! Compact Flash transport doesn't make any noise, so you don't need to worry about machine noise on the recording. The high-quality mic preamps provide phantom power to handle sensitive condenser microphones, and the analog limiter protects the recording against sudden transient distortion. With the high capacity of today's Compact Flash media, you might even be able to enjoy the performance without constantly watching the time remaining meter!

Although the HD-P2 was designed for demanding film shoots and live concerts, it's still simple and affordable enough for use in everyday classrooms, churches and home studios. School band and orchestra leaders can use it to record rehearsals for students, and then record concerts to sell for fundraising. Church leaders can record their services for duplication on CD, and its high-speed FireWire connection provides instant access to the recording, so that CDs can be authored and duplication can begin even before the congregation leaves! And how long can you record on a typical CF card? Check it out!

Sample Rate	44.1k/16-bit	48k/16-bit	48k/24-bit	96k/24-bit	192k/24-bit
512MB CF card	50 min	46 min	31 min	15 min	7 min
1GB CF card	1.6 hrs	1.5 hrs	1 hr	30 min	15 min
2GB CF card	3.3 hrs	3.1 hrs	2 hrs	1 hr	30 min
4GB CF card	6.7 hrs	6.2 hrs	4.1 hrs	2 hrs	1 hr
8GB CF card	13.5 hrs	12.4 hrs	8.2 hrs	4.1 hrs	2 hrs

With professional connectivity, built-in synchronization, high-resolution recording and Compact Flash convenience, the HD-P2 is the professional solution for serious recording in a reliable, portable package. For more detailed information visit our pro audio website at www.ramseyaudio.com.

HDP2 Professional Portable Hi-Resolution Recorder

\$995.95



New For 2007

**Professional Audio
Recording And Mixing...
On The Go!**

Tascam Pro USB Audio/Midi Interface

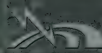
- ✓ S/PDIF Digital Input & Output
- ✓ 4 in, 4 out operation (analog, S/PDIF)
- ✓ 2 analog line inputs (1 switchable to high impedance for use with guitars, basses, etc.)
- ✓ 1 MIDI input, 1 MIDI output
- ✓ 2 XLR mic inputs with phantom power
- ✓ USB 2.0 equipped (also supports USB 1.1)
- ✓ Up to 96kHz/24-bit for high quality recordings
- ✓ Zero-latency hardware monitoring
- ✓ Separate headphone output & level controls
- ✓ Bus powered for use with any PC, Mac, or laptop!

We've seen our share of computer-based recording solutions, and Tascam's US144 is the hands-down winner for ease-of-use and portability. An amazing tool for musicians and producers, the USB144 allows you to record two tracks at once with zero latency from analog inputs. It's got the power you need for studio quality recording, but its compact size also means you can take it along with your laptop, anywhere you go!

Included with all TASCAM interfaces is a copy of Steinberg's Cubase LE recording software. This powerful software is easy to use, but packs in more power than anything in its class. You get 48 tracks of recording at 96k, 64 MIDI tracks, even cool functions like VST plug-ins and notation editing. Though the US-144 works with almost any software for Mac or Windows, Cubase LE lets you start making music right away. Full specifications available online at www.ramseyaudio.com.

US144 Professional USB Audio/Midi Audio Interface

\$199.95



Tascam 24-Track 24-Bit Portastudio

- ✓ 24-track / 24-bit recorder (44.1kHz)!
- ✓ 250 "virtual" tracks available per song!
- ✓ 36-channel mixer!
- ✓ 40GB internal hard drive, CD-R/RW drive!
- ✓ 3-band EQ on 24 channels, 8-inputs, tone generator and stereo bus with high and low sweepable shelving bands and full parametric mid band
- ✓ Three aux sends on all channels except the effects return
- ✓ Loop effect provides reverb, delay, chorus and more on an aux send and return
- ✓ Assignable Guitar multi-effects processor for distortion, chorus, delay, flange and more
- ✓ Up to eight assignable dynamics processors for compression during recording or mixdown
- ✓ Dedicated Stereo Compressor on the stereo output
- ✓ Eight inputs: 4 XLR with phantom power double as W" mic/line inputs, plus four dedicated W" mic/line inputs
- ✓ Twenty 45mm faders including master fader
- ✓ LCD display for viewing meters and edit parameters
- ✓ CD-RW drive to record Red Book CDs, import/ export WAV files and backup hard drive
- ✓ 64-voice General MIDI sound module
- ✓ Standard MIDI File player
- ✓ High-speed USB 2.0 jack connects to PC or Mac® for data backup and SMF/WAV file transfer



**The Ultimate In Home Studio Recording...
Bringing You To A New Level Never Before Imagined!**

MEGA BUCK QUALITY IS NOW AFFORDABLE!

If you're serious about the quality of your recordings, but don't want to spend a ludicrous amount of money, the Tascam 2488 is the perfect solution. 24 tracks is the industry standard for professional studios, and a few years ago a studio of this quality would have cost in the \$1M range! Now you can bring the same high quality studio editing and mixing into your home studio for a tiny fraction of that amount!

TRUE PROFESSIONAL SPECIFICATIONS!

By far the most affordable 24-track recording and mixing workstation ever made, the 2488 is the only model within three times its price range that can truly run 24 tracks at 24-bits / 44.1kHz. Eight simultaneously recordable inputs to XLR and 1/4", twenty physical faders for the mix-down channels, and each channel has 3-band EQ and built in effects processors. With the 2488 you can record up to 250 "spare" or "virtual" tracks per song! This is perfect to store different vocal versions, different bass versions, separate guitar takes, and any possible components of the song. Pick the best "takes" from the virtual tracks and simply assign them to your playback tracks! Varispeed operation provides $\pm 6\%$ pitch control and Slow Speed Audition that allows you to rehearse tricky lead lines, etc. at a lower speed but the same pitch! Each mixer channel is equipped with phase reversal, pad, basic three-band EQ (high and low shelves, plus a fully parametric mid-band), three aux sends, and an insert point (to accommodate an in-line effect or dynamics processor).

BUILT-IN MIDI GENERATOR AND LIBRARY!

The 2488 also incorporates a 16-part, 64-voice General MIDI tone generator, complete with an onboard Standard MIDI File player and metronome. This enables MIDI files be loaded and used as backing tracks, for example. Hundreds of built-in MIDI backing tracks and drum kits are included, so no need to go digging through that pile of old CDs when you need to whip up a demo! Full-featured editing, including cut/copy/paste/loop, is built-in and gives you DAW-like flexibility for building that next hit recording! All editing functions are highly intuitive for amateurs and pros alike! Relocate verses or solos with ease and speed. All editing is non-destructive, with a comprehensive multi-undo function in case you screw it up!

TASCAM 2488 is Music Trades' Product of the Year Industry Publication Honors TASCAM on 25th Anniversary of the Portastudio

TASCAM's newest cutting-edge Portastudio—the 2488—was named "Product of the Year" by Music Trades magazine in its April 2004 issue. Debuting at this year's Winter NAMM conference in January, the 2488 is the latest in TASCAM's line of Portastudios, offering 24-track/24-bit digital audio at a musician-friendly price point. 2004 marks the 25th anniversary of TASCAM's first Portastudio introduction, the 144, the world's first portable four-track cassette recorder.



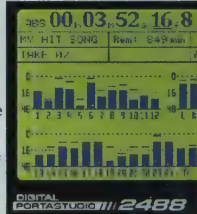
2488 24-Track Portastudio

HDD AND CD-R/RW INCLUDED!

A built-in 40GB internal hard drive gives the user space for twenty to thirty 24 track songs and virtu tracks for comping vocals and multiple takes. Also gives you plenty of room for your stored MIDI library, working tracks, and imported files. In addition, a USB2.0 port is provided for backup to a P

And for the final mix, the built-in CD-RW drive can turn your 2-track master mixdown into a Red Book CD, or use it to back up the hard drive or import and export .WAV files. If you want the best of both worlds — a portable, compact workstation and the creative power of 24, 24-bit digital tracks — look no further. Measures 21.5W" x 14D" x 5.7H". Operates on 110VAC. 220VAC/50Hz available as a special order.

Whether you own a 2488, are thinking of getting one, or simply interested in all the incredible features possible with it, get the training and tutorial DVD. It takes you from a complete introduction to the 2488 all the way through the complete creation of a song with multiple tracks, guitar tracks, vocal tracks, drum



Easy to see 2 1/4" x 2 1/2" backlit display!

machine inserts, effects, editing, final mastering and production of a CD. You will be amazed! Your host David Wills has been teaching musicians and studio owners how to use their studio equipment for over 20 years, and now you can have the same training in the comfort of your own home. David has been a touring programmer and consultant a number of top musicians including Michael Jackson, Whitney Houston, and Phil Collins. Watch David as he makes the 2488 come alive, as he produces a professional quality CD, the same as you will be able to do with the 2488!

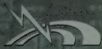


Tutorial DVD Available!

2488
2488DVD

Professional 24-Track, 24-Bit Portastudio
2488 Training and Tutorial DVD

\$795
\$399



**When You Only Need
8 Channels...
But Professional Results!**

MIXING MADE SIMPLE!

The "Little Brother" to the infamous 2488 on the previous page, this is the most complete, easy-to-use 8-track recording system on the planet! Hands-on simplicity of classic 8-track recorders, combined with the editing flexibility of CD-quality digital. The DP01FX/CD is so simple anyone can use it, just plug in and hit record on one of the eight channel strips, and you're laying down a CD-quality track! No clunky digital menus here, you've got actual knobs and buttons for the most important functions!

EVERYTHING YOU COULD EVER ASK FOR!

This studio mixer uses its LCD screens for what LCD screens are really good at... giving you visual feedback on levels, song position and track editing. Each of the 8 channel input/fader strips include high and low semi-parametric EQ with 100Hz and 10kHz center defaults; effects send controls the amount of effects on the channel; pan control for assigning a sound to the left or right in the stereo sound field; dedicated record button; mute LED; 45mm channel fader; and input buttons to assign your instruments or mics to a pair of the eight channels. In addition, there is an effects control strip with multiple reverb types, each with variable parameters; cursor controls; jog/shuttle for data input and editing; editing controls; inserting segments, etc.; transport controls; stereo/dual mono input select; jack for optional footswitch (allows hands free punch-in and punchouts!); and a headphone output with level control. A phantom power switch lets you use high-quality studio condenser microphones.

The rear panel includes MIDI time code out for syncing with a drum machines or sequencers; S/PDIF stereo digital output for mixdown to CD or DAT; high-speed USB 2.0 output that lets you back up to your computer or transfer finished songs; two balanced XLR mic inputs; mono EFX send and stereo EFX return; RCA line level outputs for monitor speakers or mixdown recorder; guitar level input switch for recording instruments direct; and 1/4" TRS Stereo Mix inputs, that loop to the outputs for monitoring a metronome or drum machine. The front panel master fader includes master/track bounce switches.

BUILT-IN HDD AND CD-R/RW DRIVES!

A built-in 40GB internal hard drive gives the user plenty of space for tons of songs, vocal tracks, instrument tracks, as well as storage of .wav files. And for the final mix, the built-in CD-RW drive can turn your 2-track master mixdown into a Red Book CD, or use it to back up the hard drive or import and export .wav files. Simplicity in recording can't get any better! Perfect for anyone who needs better-than-cassette quality recording but without expensive hardware or complex computer-based recording systems. Plus, weighing in at less than 12 pounds, the DP01FX/CD is also truly portable! The entire unit measures a scant 17.8"W x 5.1"H x 12.1"D. For full specifications visit our pro audio web site at www.ramseyaudio.com.

DP01FX/CD

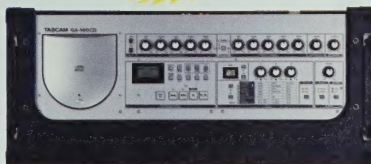
Professional 8-Track Digital Portastudio

\$599.95

100 Watt Guitar Amp & CD Trainer

- ✓ 60 watt RMS guitar amplifier!
- ✓ 20 watt per channel CD amplifier!
- ✓ 12" RockReady guitar amp speaker!
- ✓ Dual 5" stereo CD player speakers!
- ✓ Built-in DSP effects!
- ✓ Neo Tube solid state amp for true tube sound!
- ✓ CD trainer, change tempo without pitch!
- ✓ Seamless loop and guitar cancel!
- ✓ RCA line level in's and out's!
- ✓ All in one complete package!

**New For
2007**



Is It An Amp, Or A Trainer, Or A CD Player? YES!



THE SOUND OF TUBES...WITHOUT THE TUBES!

As everyone knows, tube amps sound great... but their price usually clocks in at many times that of equivalent solid-state amps. Tascam, an innovator in pro audio guitar gear for over 30 years, has come up with what is now only one of the most amazing-sounding solid-state amps on the market, but also a CD trainer unit with built-in speed-controlled CD playback! This brand new amp is the latest and greatest in solid state, featuring Tascam's newly created Neo Tube™ technology! Tascam's Neo Tube system is not the typical "modeling" of older solid state amps. Instead, it is a brand-new, painstakingly researched and designed set of patented Tascam circuitry that combines the fast, natural response of tubes with the tried and true durability of solid state!

INCREDIBLE FEATURES!

Tons of built in effects including delay, chorus, phase, flanger, tremolo & vibrato, reverb, and more can be applied to get your tone exactly the way you want without a bunch of extra pedals and processors! But wait, there's more! An amazing-sounding and feature-packed amplifier is just the beginning of what the GA100CD has to offer - it's also a full-featured CD player/trainer setup! You can pop in your favorite CDs and play along to learn the songs - if you need to slow the music down, no problem, the GA100C lets you change the tempo without screwing up the pitch! Or, change the pitch of the CD without changing the speed and tune the CD to your guitar instead of the other way around! You can also create seamless looping of a section of any CD. As a bonus, the trainer also lets you cancel out existing guitar noise from almost any CD so you can play along. With the RCA line output you can record directly from the amp, or a mix of the amp and CD audio. The included CD player also makes this a great amp for singer/songwriters and solo performers who play along with backing tracks from CD, as it eliminates the need to carry around extra CD playback equipment. We gave one to the boss' son for a true Ramsey stress test, and all his friends agree: an awesome amp! Runs on 110VAC. (I use one of these with my SG...Incredible, that's all I can say!)

GA100CD

100 Watt Guitar Amplifier CD Trainer Combo

\$699.95



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Super-Pro FM Stereo Radio Station



from **\$269.95**

Build yourself an FM radio station complete with automatic mic mixing and multi-channel inputs! Our #1 Kit for years throughout the world! (See page 5)

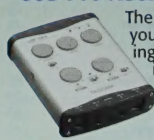
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(See Page 22 for details)

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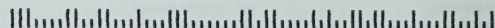
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